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MARINE CORPS ORDER P3500.66A

From: Commandant of the Marine Corps
To: Distribution List

Subj: AVIATION TRAINING AND READINESS (T&R) MANUAL, METEOROLOGY AND OCEANOGRAPHY SERVICES (SHORT TITLE: T&R MANUAL, METOC)

Ref: (a) MCO P3500.14H
(b) MCO 5215.1H

Encl: (1) LOCATOR SHEET

1. Purpose. To publish policies, procedures and standards regarding the training of METOC personnel per reference (a).

2. Cancellation. T&R Manual, METOC, MCO P3500.66.

3. Background. Significant changes to reference (a) directed a revision to this Manual in the following categories: Unit Mission Statement, Unit Core Capability Statement, Unit Mission Essential Task List, Unit Core Skill Proficiency requirements, Unit Instructor requirements, and T&R syllabi structure. Reference (a) prescribes a unique template to provide the commander with standardized programs of instruction. As such, this Order deviates from the five paragraph order format outlined in reference (b).

4. Recommendations. Recommended changes to this Order are invited and may be submitted via the syllabus sponsor and the appropriate chain of command to: Commanding General, Training and Education Command (C 4610), Marine Corps Combat Development Command, 3300 Russell Road, Quantico, VA 22134-5001.

5. Applicability. This Manual is applicable to the Marine Corps Total Force.

6. Certification. Reviewed and approved this date.

T. S. JONES
By direction

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T&R MANUAL, METOC

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of Person Incorporating Change

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CHAPTER 1

METEOROLOGICAL AND OCEANOGRAPHIC (METOC) SERVICES (MOS 6821, 6842, 6852)

100. CORE COMPETENCY

1. Background. Core Capabilities defined and described in this section are provided to ensure METOC units maintain a common base of training and depth of capabilities. When resources permit and the commander deems additional training would significantly increase unit warfighting capability, training to a level above these base capabilities is encouraged. It is incumbent upon, and expected of the commander to balance any increase in the depth of core capabilities against the long-term combat readiness of the unit.

a. Unit training management (UTM) is the application of the Marine Corps Training Principles and the Systems Approach to Training (SAT) to satisfy the training requirements of commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in MCRP 3-0A, *Unit Training Management Guide*, and form the basis for the development of this T&R Manual. Familiarity with MCRP 3-0A will enhance the understanding of SAT used in the T&R development and Marine Corps UTM principles.

b. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities that are realistically expected to be assigned in combat, which support the Mission Essential Tasks (MET) derived from MCWP 3-35.7 and T/O mission statements.

2. METOC Services Mission. To collect, assess and disseminate METOC intelligence relevant to friendly and enemy force strengths and vulnerabilities for the planning and execution of operations necessary to characterize the battlespace. This includes atmospheric, space, climatic and hydrographic intelligence for use in the production of Tactical Decision Aids (TDA) and METOC effects matrices.

3. Mission Essential Task List (METL)

a. (UJTL OP 2.2.3) Collect and assess meteorological and oceanographic (METOC) operational information.
- Conduct meteorological satellite sensing, assessment and dissemination operations.
- Conduct meteorological radar sensing, assessment and dissemination operations.
- Conduct meteorological surface observational sensing, assessment and dissemination operations.
- Conduct upper atmospheric profile sensing, assessment and dissemination operations.
- Conduct oceanographic observation operations.
- Conduct climatological and astronomical assessments.
- Conduct analysis of meteorological and oceanographic data.
- Develop forecast products in support of operations.

b. (UJTL SN 2.2.1) Collect information on strategic situation worldwide.
- Provide meteorological, oceanographic and geospatial data.

c. (UJTL TA 1.2.2) Conduct airborne operations.

- Provide meteorological impact assessment to airborne operations.

d. (UJTL TA 1.2.3) Conduct amphibious assault and raid operations.
   - Meteorological and oceanographic impact assessment to amphibious assault and raid operations.

e. (UJTL TA 1.1.1) Conduct tactical airlift.
   - Provide meteorological impact assessment to tactical airlift and delivery operations.

f. (UJTL TA 1.1.2) Conduct sea and air deployment operations.
   - Provide meteorological and oceanographic impact assessment to sea and air deployment operations.

g. (UJTL OP 5.7.5) Coordinate host nation support.
   - Coordinate host-nation support for meteorological sensing and data.

h. (UJTL TA 1.1.2) Coordinate coalition support.
   - Coordinate coalition support for meteorological sensing and data.

i. (UJTL OP 5.6.1) Integrate operational information operations.
   - Integrate meteorological, oceanographic and space weather products into the tactical and operational command and control nodes.

j. (UJTL OP 5.3.1) Conduct operational mission analysis.

4. Table of Organization (T/O). Refer to T/Os 8702 and 8703 (see table 1-1). T/Os for supporting establishments exist but are not specified herein. T/Os are managed by Total Force Structure Division (TFSD) and Marine Corps Combat Development Command (MCCDC). As of this publication date, authorized METOC units are:

Table 1-1. -- METOC T/Os for 8702 and 8703.

8702 (Fixed)	8703 (Rotor)
MWSS METOC UNIT 1 METMF(R) 1 NITES IV Systems 1 METOC Officer 16 METOC Enlisted (9) 6842 (7) 6821	MWSS METOC UNIT 1 METMF(R) 1 NITES IV Systems 1 METOC Officer 15 METOC Enlisted (8) 6842 (7) 6821
MWSS MST DETACHMENT 2 NITES IV Systems 1 METOC Officer 4 METOC Enlisted (2) 6842 (2) 6821	MWSS MST DETACHMENT 2 NITES IV Systems 1 METOC Officer 4 METOC Enlisted (2) 6842 (2) 6821

5. Core Capability. The United States Marine Corps METOC community structure resides within the Air Combat Element (ACE) of the Marine Air Ground Task Force (MAGTF); however, by doctrine the community is task organized to provide direct and indirect support to all combat elements of the MAGTF. For clarity, core capabilities of each task organized METOC support unit and detachment are defined.

a. Marine Wing Support Squadron (MWSS) METOC Unit. A core capable METOC MWSS unit is the highest echelon of Marine Corps METOC support. As such, the MWSS core capable unit must be able to sustain continuous meteorological support for all aviation sorties launching from the parent Forward Operating Base (FOB) and two Forward Arming and Refueling Points (FARPs), and provide a METOC Support Team (MST) to other than ACE requirements. Support capability is based on 24-hour flight/mission operations and assumes greater than or equal to 70 percent operational meteorological equipment readiness and greater than or equal to 90 percent T/O personnel on-hand. If unit equipment is less than 70 percent or T/O personnel is less than 90 percent, core capability will be degraded by a like percentage. A core capable unit is able to accomplish all tasks designated in the unit METL from a main base or expeditionary base.

b. Core Capable MWSS METOC Section. A core capable MWSS METOC Section is able to support 24/7 METOC operations with remote atmospheric sensing at two FARPs when assigned in support of aviation operations. When directed by the MAGTF commander as the MAGTF METOC support center, the unit will collect, assimilate and disseminate METOC data to and from all subordinate METOC units in support of MAGTF operations in theater through applicable command and control nodes. The MWSS METOC Section contains the following organic capabilities/equipment:

Equipment
Direct meteorological satellite ingest
Meteorological radar surveillance
Lightning detection
Two remote surface observation sensors
One local observational sensor
One man-portable meteorological equipment suite

Capability
Command and control interface capability
Covered and uncovered voice communications
Meteorological model retrieval and analysis
Upper atmospheric sensing

c. Core Capable MWSS MST Detachment. A core capable MWSS MST Detachment provides first-in and rapid establishment of METOC support to a MAGTF command element other than ACE. It’s capabilities are limited to surface observational data, data analysis, and forecasting. The MST Detachment contains the following capabilities/equipment:

Equipment
One local observational sensor
Two man-portable meteorological equipment suites

Capability
Uncovered voice communications
Command and control interface capability
Meteorological model retrieval and analysis

6. METL/Core Skills. METOC Core Skills outline and directly support the unit METLs.

a. Table 1-2 outlines METOC abbreviations used herein. Table 1-3 lists core skills with associated METLs.

Table 1-2.-- METOC Core Skills.

CORE SKILL	ABBREVIATION
Meteorology Surface Observing	MSO
Upper Atmospheric Sensing	UAS
Oceanographic and Hydrological Services	OHS
Meteorological Radar	MDR
Meteorological Satellite	MSAT
Climatological and Astronomical Services	MCS
Applied Meteorological Sciences	AMS
MAGTF Forecast Support	MFS
METOC Impact Assessment	MIA
Warnings, Watches and Advisories	WWA
METOC Data Analysis	MDA
METOC Product Briefings	MPB
METOC Planning/Coordination	MPC
Administration	ADM

b. Table 1-3 provides direct correlation between core skills and unit METLs.

Table 1-3.-- Core Skill/METL Matrix.

MISSION ESSENTIAL TASK LIST	MSO	UAS	OHS	MDR	MSAT	MCS	AMS	MFS	MIA	WWA	MDA	MPB	MPC	ADM
Conduct meteorological satellite sensing, assessment and dissemination operations.					X		X	X	X		X	X		
Conduct meteorological radar sensing, assessment and dissemination operations.				X			X	X	X		X	X		
Conduct meteorological surface observational sensing, assessment and dissemination operations.	X						X		X		X	X		
Conduct upper atmospheric profile sensing, assessment and dissemination operations.	X	X		X	X		X		X		X	X		
Conduct oceanographic observation operations.	X		X								X			
Conduct climatological, astronomical assessment.						X	X		X			X	X	
Conduct analysis of meteorological and oceanographic data.	X	X	X	X	X		X	X	X		X	X		
Develop forecast products in support of MAGTF operations.	X	X	X	X	X	X	X	X	X	X	X	X	X	X

7. METOC Core Model Minimum Requirements (CMMR). METOC core competency reflects minimum level of competency a unit must achieve to perform its core capability. Unit core competency is measured in terms of minimum Core Skill Proficiency (CSP) and minimum number of METOC combat leaders.

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered core competent, a unit must have METOC personnel who are proficient in each core skill (unit CSP) as indicated in tables 1-4 and 1-5. In order for an individual to be considered proficient in a core skill (individual CSP), personnel must attain and maintain proficiency in core

skill events, as noted in paragraphs 9a(1) and 9a(2) and delineated in tables 1-6 through 1-10.

* NOTE: Proficiency in core plus skills is not required to obtain unit CSP and will not contribute to unit T-level readiness. Below are the METOC community's recommended unit/individual CSP standards:

Table 1-4.-- MWSS METOC Unit CSP Requirements.

CORE/CORE PLUS SKILL	APPRENTICE METOC ANALYST	JOURNEYMAN/MASTER METOC ANALYST	METOC OFFICER
ADM	0	0	1
MSO	5	5	0
UAS	5	5	0
OHS	5	5	0
MDR	2	5	0
MSAT	3	5	0
MCS	3	5	1
AMS	3	5	1
MFS	0	5	1
MIA	0	5	1
WWA	3	5	0
MDA	4	5	1
MPB	1	5	1
MPC	0	1	1

Table 1-5.-- METOC MST Unit CSP Requirements.

CORE/CORE PLUS SKILL	APPRENTICE METOC ANALYST	JOURNEYMAN/MASTER METOC ANALYST	METOC OFFICER
ADM	0	0	1
MSO	2	2	0
UAS	0	2	0
OHS	2	2	0
MDR	1	2	0
MSAT	1	2	0
MCS	1	2	0
AMS	1	2	1
MFS	1	2	1
MIA	0	2	0
WWA	1	2	0
MDA	1	2	1
MPB	1	2	1
MPC	1	1	1

(1) Events Required to Attain Individual CSP. To initially **attain** CSP, METOC personnel must complete level 100 events and all T&R events listed in tables 1-6 through 1-8 for each core skill. Attain events shall not be waived.

Table 1-6.—- Attain Apprentice METOC Analyst Core Skills.

	APPRENTICE METOC ANALYST CORE SKILLS										
	MSO	UAS	OHS	AMS	MDR	MSAT	MCS	WWA	MDA	MPB	MFS
# Events	4	6	2	11	3	3	2	5	8	2	4
Events	200 201 202 203R	210 211 212 213R 214R 215R	220 221	225 226 227R 228 229 230 231R 232R 233 234 235	240 241R 242R	245 246 247R	250 251	255 256R 257 258 259	260 261 262 263R 264R 265 266R 267R	270 271R	275 276R 277 278

Table 1-7.-- Attain Journeyman METOC Analyst Core Skills.

	JOURNEYMAN METOC ANALYST CORE SKILLS								
	AMA	OHS	MDR	MSAT	MCS	MPB	MFS	MIA	MPC
# Events	11	4	2	1	1	5	3	9	4
Events	MSO UAS OHS AMS MDR MSAT MCS WWA MDA MPB MFS	300R 301 302 303R	310 311	320	330R	340 341R 342 343R 344	345R 346R 347	360 361 362 363R 364 365 366 367 368R	350R 351 352 353R

Table 1-8.-- Attain Master METOC Analyst Core Skills.

	MASTER METOC ANALYST CORE PLUS SKILLS					
	AMA	JMA	MPB	MDR	MPC	MIA
# Events	11	8	2	1	6	4
Events	MSO UAS OHS AMS MDR MSAT MCS WWA MDA MPB MFS	OHS MDR MSAT MCS MPB MFS MIA MPC	400 401	410	420 421 422 423 424 425	430 431 432 433

(2) Events Required to Maintain Individual CSP. To maintain CSP, METOC personnel must **maintain** proficiency in all level 100 events and T&R events listed in tables 1-9 and 1-10 for each core skill.

Table 1-9.-- Maintain Events for Apprentice METOC Analyst.

	APPRENTICE METOC APPRENTICE CORE SKILL									
	MSO	UAS	OHS	AMS	MDR	MSAT	WWA	MDA	MPB	MFS
# EVENTS	1	3	0	3	2	1	1	4	1	1
EVENTS	203R	213R 214R 215R		227R 231R 232R	241R 242R	247R	256R	263R 264R 266R 267R	271R	276R

Table 1-10.-- Maintain Events for Journeyman/Master METOC Analyst.

	JOURNEYMAN METOC ANALYST CORE SKILLS												
	MSO	UAS	OHS	AMS	MDR	MSAT	MCS	WWA	MDA	MPB	MFS	MIA	MPC
# EVENTS	1	3	2	3	2	1	1	1	4	3	3	2	2
EVENTS	203R	213R 214R 215R	300R 303R	227R 231R 232R	241R 242R	247R	330R	256R	263R 264R 266R 267R	271R 341R 343R	276R 345R 346R	363R 368R	350R 353R

b. Minimum Combat Leadership Requirements. As a minimum in order to be considered core competent, a unit must have METOC personnel with the leadership designations listed in table 1-11.

Table 1-11.-- Minimum Combat Leadership Requirements.

DESIGNATION	MWSS	MST	REMARKS
AMA	6	1	
JMA	3	1	
MMA	2	0	MMA replaces JMA when feasible.
MOE	1	1	

8. Qualifications and Designations Tables. Tables 1-12 through 1-14 delineate T&R events required to be completed to attain initial qualifications, requalifications and designations. All stage lectures, briefs, squadron training and prerequisites shall be completed prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in the individual training jackets (MC11140 Rev.7-’93).

a. Qualification. A qualification is a status assigned to personnel based on demonstrated proficiency in a specific skill. Specific criteria to achieve qualifications is delineated in table 1-12 and the MAWTS-1 Course Catalog. Upon completion of the qualification criteria, commanding officers shall issue a qualification letter for inclusion into the individual training jackets. Individuals do not lose a qualification when refreshing events. Loss of proficiency (delinquent refresh events) for all associated qualification events constitutes loss of the qualification. Requalification requires demonstrated proficiency by successfully completing all R-coded

events associated with the respective qualification (unless waived per paragraph 305 of the Aviation T&R Program Manual). See tables 1-9 and 1-10.

b. Designations. A designation is a status assigned to an individual based on leadership ability (see table 1-13). It is a command specific, one-time occurrence and remains in effect until removed for cause. Commanders shall issue a designation letter to individuals for inclusion into training jackets and a Page-11 entry in the Service Record Book (SRB).

Table 1-12.—- METOC Qualifications.

QUALIFICATION TRACKING CODE	QUALIFICATION REQUIREMENTS
MSO-650	200 Level MSO Stage, MDN-623, GME-632, GME-633.
UAS-651	200 Level UAS stage, MDN-623.
OHS-652	200 Level OHS Stage, MDN-623.
FSQ-653*	MSO and UAS Qualification. AMS-225 through AMS-228, AMS-230, MDA-265, and MDA-266.
MFS-654	All 200 level stages of training.
MDR-655	200 and 300 Level MDR Stage .
OFS-656	200 and 300 Level OHS Stage .
MIA-657	MFS Qualification, 300 Level MIA Stage, MPB-341 through MPB-344 and MFS-347.
FSI-658	JMA Designation.
*FSQ This qualification shall only pertain to MOS 6821.	

Table 1-13.-- METOC Designations.

DESIGNATION TRACKING CODE	DESIGNATION REQUIREMENTS
AMA-660	MFS Qualification.
JMA-662	AMA Designation, 300 Core Skill Advanced Phase and JMA-661.
MMA-663	AMA, JMA and MAI Designations.
MAI-664	JMA Designation.

c. Instructor Requirements. As a minimum, a unit should maintain instructor designations to support METOC operations (see table 1-14). Instructor designations are outlined in the MAWTS-1 Course Catalog and MCO 3500.12C (WTTP).

Table 1-14.-- METOC Instructor.

	LOCATION		
INSTRUCTOR TRACKING CODE	MWSS	MST	FORMAL SCHOOL
FSI-601	0	0	8

9. METOC Training Progression Model. The METOC training Progression Model (figure 1-1) provides community recommended core skills, requirements, and designation attainment timelines for average METOC personnel.

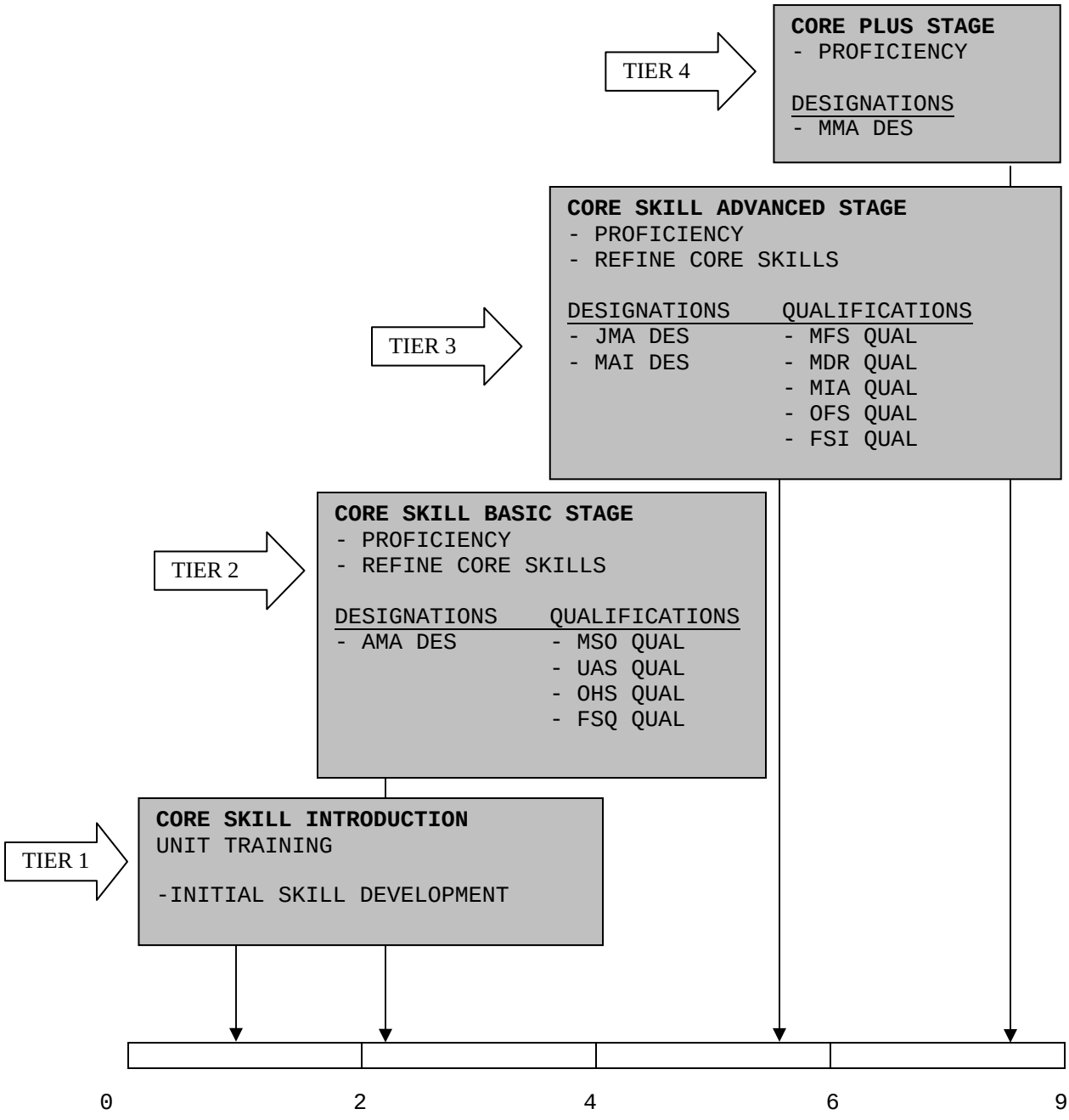

Figure 1-1.-- METOC Training Progression Model.

101. BASIC PROGRAMS OF INSTRUCTION (POI)

WEEKS	COURSE/PHASE	ACTIVITY
1-32	Meteorological and Oceanographic Apprentice Course	Keesler AFB, MS
33-84	Core Skill Basic Training	Tactical Squadron
85-344	Core Skill Advanced Training	Tactical Squadron
345-520	Core Plus Training	Tactical Squadron

102. POI FOR METOC REFRESHER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1-26	Core Skill Basic Training	Tactical Squadron
27-52	Core Skill Advanced Training	Tactical Squadron
53-520	Core Plus Training	Tactical Squadron

103. POI FOR METOC FORMAL SCHOOLS INSTRUCTOR

WEEKS	COURSE/PHASE	ACTIVITY
1-6	Basic Instructor Course	81TRW USAF
7-10	Training Supervisor Course (OIC/NCOIC)	81TRW USAF
7-22	Teaching Practicum	335TRS USAF
23-24	Objectives and Tests	81TRW USAF
31-32	Instructional Systems Development (ISD)	81TRW USAF
*52-53	Instructor Supervisor Course	81TRW USAF
*104-130	Master Instructor Program	335TRS USAF

* Not all instructors will attend weeks 52 through 130.

112. EVENT TRAINING FOR BASIC METOC PERSONNEL

1. Core Skill Introduction Phase

STAGE	NO. EVENTS	NO. HOURS	CRP
(FAM) Familiarization	11	305.5	60.0
TOTAL FOR PHASE:	11	305.5	60.0
ACCUMULATION FOR BASIC POI:	11	305.5	60.0

2. Core Skill Basic Phase

STAGE	NO. EVENTS	NO. HOURS	CRP
(MSO) Meteorological Surface Observations	4	34.5	2.0
(UAS) Upper Atmospheric Sensing	6	6.0	0.5
(OHS) Oceanographic/Hydrological Services	2	12.0	0.5
(AMS) Applied MET Science	11	65.5	4.5
(MDR) Meteorological Radar	3	17.0	0.75
(MSAT) Meteorological Satellite	3	8.0	0.75

2. Core Skill Basic Phase -- Continued

STAGE	NO. EVENTS	NO. HOURS	CRP
(MCS) Climatological/Astronomical	2	6.0	0.5
(WWA) Watches, Warnings, Advisories	5	6.75	0.5
(MDA) METOC Data Analysis	8	23.0	2.0
(MPB) METOC Product Briefing	2	5.0	1.0
(MFS) MAGTF Forecast Support	4	32.5	2.0
TOTAL FOR PHASE:	50	216.25	15.0
ACCUMULATION FOR BASIC POI:	61	521.75	75.0

3. Core Skill Advanced Phase

STAGE	NO. EVENTS	NO. HOURS	CRP
(OHS) Oceanographic/Hydrological Services	4	7.0	2.0
(MDR) Meteorological Radar	2	8.0	3.0
(MSAT) Meteorological Satellite	1	2.0	1.0
(MCS) Climatological/Astronomical	1	12.0	1.0
(MPB) METOC Product Briefing	5	23.5	3.5
(MFS) MAGTF Forecast Support	3	9.5	3.0
(MPC) METOC Planning/Coordination	4	40.0	2.0
(MIA) METOC Impact Assessment	9	29.0	4.5
TOTAL FOR PHASE:	29	131.0	20.0
ACCUMULATION FOR BASIC POI:	90	652.75	95.0

4. Core Plus Phase

STAGE	NO. EVENTS	NO. HOURS	CRP
(MPB) METOC Product Briefing	2	30.0	1.0
(MDR) Meteorological Radar	1	6.0	1.0
(MPC) METOC Planning/Coordination	6	101.0	1.5
(MIA) METOC Impact Assessment	4	33.0	1.5
TOTAL FOR PHASE:	13	170.0	5.0
ACCUMULATION FOR BASIC POI:	103	822.75	100.0

122. EVENT TRAINING FOR METOC REFRESHER TRAINING

1. Core Skill Introduction Phase There are no refresher events in this phase.

2. Core Skill Basic Phase

STAGE	NO. EVENTS	NO. HOURS
(MSO) Meteorological Surface Obs.	1	30.0
(UAS) Upper Atmospheric Sensing	3	4.0
(OHS) Oceanographic/Hydrological Services	0	0.0
(AMS) Applied MET Science	3	8.0
(MDR) Meteorological Radar	0	0.0
(MSAT) Meteorological Satellite	1	1.0
(MCS) Climatological/Astronomical	0	0.0
(WWA) Watches, Warnings, Advisories	1	2.0
(MDA) METOC Data Analysis	4	13.0
(MPB) METOC Product Briefing	1	2.0
(MFS) MAGTF Forecast Support	1	26.0
TOTAL FOR PHASE:	15	86.0
ACCUMULATION FOR BASIC POI:	15	86.0

3. Core Skill Advanced Phase

STAGE	NO. EVENTS	NO. HOURS
(OHS) Oceanographic/Hydrological Services	2	1.0
(MDR) Meteorological Radar	0	0.0
(MSAT) Meteorological Satellite	0	0.0
(MCS) Climatological/Astronomical	0	0.0
(MPB) METOC Product Briefing	2	18.0
(MFS) MAGTF Forecast Support	2	5.5
(MPC) METOC Planning/Coordination	2	32.0
(MIA) METOC Impact Assessment	2	6.0
TOTAL FOR PHASE:	10	62.5
ACCUMULATION FOR BASIC POI:	25	148.5

4. Core Plus Phase. There are no refresher events in this phase.

123. EVENT TRAINING FOR METOC FORMAL SCHOOLS INSTRUCTOR

STAGE	NO. EVENTS	NO. HOURS
(FSI) Formal Schools Instructor	6	391.0
TOTAL FOR PHASE:	6	391.0
ACCUMULATION FOR REFRESHER POI:	6	391.0

130. EVENT PERFORMANCE REQUIREMENTS

1. Purpose. The purpose of this section is to identify and explain combat readiness of METOC units to meet mission requirements.

2. General

a. Realizing this Manual is unclassified, DC AVN and CG MCCDC encourage squadrons to use the full range of current, newly developed and proven tactics.

b. The Core Skill Introduction phase is designed for instructors and trainees to maximize training and minimize syllabus support hours.

c. An instructor shall evaluate all events annotated with an "E" per Aviation T&R Program Manual, chapter 3. Instructors are responsible for assessing performance during a particular event. They are normally designated or MAWTS-1 certified.

d. The METOC officer (MO) shall ensure designation, qualification and requirement codes are entered in the appropriate event tracking software and the individual training jackets.

3. Formal School Requirements. Events contained in this Manual outline training standards for OccFld 6800. Currently, initial accession standards are met by two formal school courses, the Marine Corps Weather Observer (MCWO) Course and the Meteorological and Oceanographic Analyst (MOAF) Course. However, the requirement to introduce all core skills within a single curriculum at initial accession has been validated. This curriculum includes current MCWO and MOAF objectives. During the transition phase to a single curriculum, the following guidance shall be utilized to ensure training standards are met:

a. Personnel attending the MCWO and MOAF Courses.

(1) Events completed during the courses shall be recorded in the individual training jackets and appropriate tracking software.

(2) Personnel shall not be assigned to any core skill advanced stage of training until completion of MOAF Course.

(3) Pre-requisites to attend the MOAF Course are:

(a) Principles of Oceanography Course.

(b) Marine Corps Distance Learning Course Basic Meteorology.

(c) Apprentice METOC Analyst Designation.

(d) Forecast Support Qualification.

b. Personnel attending the Air Force Weather Apprentice Course (AFWAC).

(1) Personnel who have completed AFWAC shall be assigned to the METOC Doctrine (MDN) stage of training upon assignment to their first duty station.

(2) Assignment to stages of training after completion of the level 100 and MDN events *shall be dictated by unit readiness requirements*. The syllabus contained in this Manual provides a logical progression of training

and should be followed as close as possible.

4. Academic Training. Pre-requisite academic training for events is the responsibility of the METOC unit. This Manual provides METOC units with the standards of training to obtain and maintain proficiency in the MOS. MAWTS, MARFOR, COMCABWEST and COMCABEAST METOC officers shall coordinate the development f lesson plans to support this syllabus as required.

5. References. References provided in Appendix D shall be utilized to ensure safe and standardized training procedures, performance standards, grading criteria and equipment operations.

6. Implementation. Squadron commanders are the designating authority. Commanders may delegate, in writing, designation authority to the MO or other personnel as conditions warrant. METOC Analyst Instructors (MAI) that have personnel assigned to the Fleet Assistance Program (FAP) shall report Combat Readiness Percentages (CRP) to the parent command.

7. T&R Event Composition. MCO P3500.14H, chapter 2, outlines event components. References utilized in the development and that directly support the syllabus within this Manual are listed in Appendix B. An event contained within a T&R manual is an individual or collective training standard. The following elements may be dependent on the stage in which they are contained:

1/	2/	3/	4/	5/	6/
SAM-XXX	0.5	Z,R	E	EQUIP	L/S

Goal. State the terminal-learning objective.

Requirement. List the specific tasks for the event; indicate what the crew/individual must accomplish.

Performance Standard. Describe the measurable level of proficiency for that event.

Prerequisite. Provides a listing of academic training or other T&R events that must be completed before satisfying the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy the completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

NOTES:

1/ Events are coded per Appendix B of Aviation T&R Program Manual.

2/ Projected event duration is furnished as a planning tool.

3/ Denotes the applicable Program of Instruction (Basic POI is understood), Z is reserve, R is refresher.

4/ An **"E"** indicates an Evaluated event by a qualified instructor.

5/ The equipment or activity subcategory is listed **"G"** = Garrison Equipment; **"M"** = METMF(R); **"N"** = NITES IV.

6/ Conditions Code: **"L"** = live Training; **"S"** = simulator training;

"L/S" = live preferred/simulator optional; **"S/L"** = simulator preferred/live optional; **"N"** = Night; Where contained within **()** denotes optional conditions.

Note: Elements of an event may be deleted if not applicable. (Example: External Syllabus Support may be deleted if not required for the event)

131. CORE SKILL INTRODUCTION TRAINING

1. Familiarization

a. Purpose. To introduce core skills required to function within the USMC METOC community.

b. General. The requirements for initial accession into occupational field 6800 are outlined in the Marine Corps MOS Manual. *A Top Secret security clearance is required*.

c. Ground/Academic Training. Academic training shall be conducted at the Meteorological Training Facility aboard Keesler Air Force Base, Mississippi. Currently, there are two pipelines for initial accession training for OccFld 6800: the MCWO Course provides basic meteorology training that results in awarding of MOS 6821; and the AFWAC. The requirement for an initial accession course that introduces all core skills into a single initial accession course has been identified, approved and is currently being implemented. The MCWO course is an initial segment of the Weather Apprentice course. Thus, the requirements contained in this stage pertain to all initial accession personnel. Personnel who attended the MCWO course shall have completed events annotated in their individual training jackets. Remaining events shall be completed at the first unit.

d. Event Training. (11 Events, 305.5 Hours).

FAM-100	1.0	E	N/A	L

Goal. METOC T&R Manual familiarization.

Requirement. Understand the composition and requirements of the METOC T&R Manual.

Performance Standard. With an accuracy of 70%, state the components, composition and procedures for completing requirements.

FAM-101	10.0	E	L

Goal. Introduce basic computer operations.

Requirement. Receive academic training on basic computer operating skills.

Performance Standard. Complete all progress checks and exams with 70% proficiency.

FAM-102	40.5	E	N/A	L

Goal. Meteorological satellite familiarization.

Requirement. Receive academic training on meteorological satellites:

(1) Types of meteorological satellites.
(2) Evaluation of satellite imagery features.
(3) Microwave products.
(4) Relationships of satellite data to meteorological events.
(5) Deriving wind flow from satellite imagery.

Performance Standard. Complete progress checks and exams with 70% proficiency.

FAM-103	45.0	E	N/A	L

Goal. Advanced meteorological familiarization.

Requirement. Receive academic training on advanced meteorological skills:

(1) Pressure systems.
(2) Frontal systems.
(3) Turbulence.
(4) Vorticity.
(5) Convective severe weather phenomena.
(6) Non-convective severe weather phenomena.
(7) Icing.
(8) Vertical consistency evaluation.

Performance Standard. Explain dynamic fundamentals of listed meteorological features. Complete progress checks and exams with 70% proficiency.

FAM-104	68.0	E	N/A	L

Goal. Meteorological chart analysis familiarization.

Requirement. Receive academic training on meteorological chart analysis:

(1) Analyze upper-air features.
(2) Analyze surface charts.

Performance Standard. Identify and technically discuss analyzed features. Complete progress checks and exams with 70% proficiency.

FAM-105	12.0	E	N/A	L

Goal. Meteorological equipment familiarization.

Requirement. Identify, operate and state the capabilities of the following equipment:

(1) Cloud height equipment.
(2) Visibility equipment.
(3) Wind equipment.
(4) Pressure equipment.
(5) Temperature and dew point equipment.
(6) Precipitation measuring equipment.

(7) Automated sensors.
(8) Organizational structure of the DOD/DCS global weather communication system.

Performance Standard. Complete progress checks and exams with 70% proficiency.

FAM-106	12.0	E	N/A	L

Goal. Advanced computer analysis familiarization.

Requirement. Receive academic training on advanced meteorological computer analysis techniques.

(1) Navigate the operating system.
(2) Software applications.
(3) Depict wind flow on satellite imagery.
(4) Analyze thickness features.
(5) Perform streamline analysis.
(6) Reanalyze computer surface products.
(7) Reanalyze computer upper air products.

Performance Standard. Complete progress checks and exams with 70% proficiency.

FAM-107	40.5	E	N/A	L

Goal. Doppler radar fundamentals and interpretation familiarization.

Requirement. Receive academic training on Doppler radar fundamentals and image assessment skills:

(1) Weather radar theories.
(2) Radar system concepts.
(3) Radar products.
(4) Radar product assessment.
(5) Identification of radar features.

Performance Standard. Complete progress checks and exams with 70% proficiency.

FAM-108	40.5	E	N/A	L

Goal. Routine METOC product processing familiarization.

Requirement. Receive academic training on routine METOC product processes:

(1) Decode a Terminal Aerodrome Forecast (TAF).
(2) Decode numerical forecast products.
(3) Extract climatological data.
(4) Interpret numerical weather prediction products (text).
(5) Interpret numerical weather prediction products (fine scale model visualization).
(6) Evaluate weather cross-section products.

Performance Standard. Identify and technically discuss the processes and procedures listed above. Complete progress checks and exams with 70% proficiency.

FAM-109 12.0 E N/A L

Goal. Weather feature prognosis techniques familiarization.

Requirement. Receive academic training on weather feature prognosis techniques:

(1) Surface weather features prognosis.
(2) Upper air weather feature prognosis.
(3) Components of an effective regime forecast process.

Performance Standard. Identify and discuss the forecast process for surface and upper air prognosis. Complete final block exam with 70% accuracy.

FAM-110 12.0 E N/A L

Goal. Forecasting techniques and procedures familiarization.

Requirement. Receive academic training on forecasting techniques and procedures:

(1) Forecast sounding evaluation.
(2) Forecast weather elements (synoptic scale).
(3) Forecast weather elements (mesoscale).
(4) Forecast weather elements (convective).
(5) Forecast weather elements (non-convective).

Performance Standard. Complete all progress checks and exams with 70% proficiency.

FAM-111 12.0 E N/A L/S

Goal. Meteorological theories and dynamics application familiarization.

Requirement. Within a live laboratory environment, while simulating operations at a garrison weather facility:

(1) Perform quality assurance.
(2) Operate pilot to Metro radio.
(3) Encode PIREPS.
(4) Prepare Terminal aerodrome forecast (TAF).
(5) Encode TAFS.
(6) Prepare a route forecast.
(7) Prepare a range forecast.
(8) Prepare weather warnings.
(9) Prepare weather advisories.
(10) Prepare and brief flight weather products.
(11) Prepare and brief watch changeover briefs.

Performance Standard. Complete all progress checks and exams with 70% proficiency.

132. CORE SKILL BASIC TRAINING

1. Meteorological Surface Observations (MSO)

a. Purpose. To develop proficiency in observing, recording and disseminating meteorological elements that comprise the surface meteorological reports (observations).

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at observing, recording and disseminating meteorological surface observations.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize Academic Support Packages (ASP) when appropriate.

d. Event Training. (4 Events, 34.5 Hours).

MSO-200	2.0	E	G,M,N	L

Goal. Master fundamentals of surface observations.

Requirement. Discuss, in detail, the elements that comprise a METAR surface observation. Discussion will include rules governing the taking and observing of elements, conversion or computation (as required), and encoding.

(1) Sky condition.
(2) Visibility.
(3) Weather and obstructions to vision.
(4) Pressure.
(5) Temperature.
(6) Wind.
(7) Remarks/additive data.
(8) Special Criteria.
(9) Local Criteria.

Performance Standard. Evaluation of knowledge may be obtained through oral or written exam. Responses must be in accordance with, NAVMETOCCOMINST 3141.2_.

MSO-201	0.5	E	G,M	L

Goal. Perform ceiling balloon operations.

Requirement. In accordance with NAVMETOCCOMINST 3141.2_, successfully determine ceiling heights.

Performance Standard. Practical application without error.

MSO-202	2.0	E	G,M	L

Goal. Compute meteorological values.

Requirement. Verbally state the computation procedures:

(1) Pressure altitude.
(2) Density altitude.
(3) Altimeter.
(4) Wet Bulb Globe Temperature Index.
(5) Wind Chill Temperature.
(6) Fahrenheit to Celsius.
(7) Relative Humidity.
(8) Knots to Miles per hour.
(9) Dew point.
(10) Humidity Types.

Performance Standard. List parameters required for computations and state the computation procedures without error.

MSO-203	30.0	R	E	G,M,N	L

Goal. Take, record and disseminate a surface meteorological observation.

Requirement. Evaluate, record and decode elements from automated sensing equipment under supervision. Perform the following:

(1) Determine and record type of observation.
(2) Record time of observation.
(3) Verify and record wind direction, speed, character, and significant wind events.
(4) Evaluate, verify and record visibility.
    (a) Types and direction of obscuring phenomena.
    (b) Types and intensity of weather.
(5) Determine and record sky condition.
    (a) Cloud type.
    (b) Cloud height.
    (c) Cloud direction and movement.
    (d) Cloud amount.
(6) Read and record dry bulb and dew point temperatures.
(7) Read and record current altimeter setting.
(8) Encode and record applicable remarks.
(9) Read and record station pressure.
(10) Read and record sea level pressure.
(11) Proof read recorded elements.
(12) Initial observation, confirming accuracy of report.
(13) Record summary of the day.

Performance Standard. In accordance with NAVMETOCCOMINST 3141.2_, record a minimum of 100 surface weather observations with an accuracy rate of 97.0%; 50% of the total observations must take place in a nighttime environment.

Prerequisite. MSO-200, MSO-201, MSO-202.

2. Upper Atmospheric Sensing (UAS)

a. Purpose. To develop proficiency in upper atmospheric sensing,

analysis and reporting.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at observing, recording and disseminating upper atmospheric observations.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (6 Events, 6.0 Hours).

UAS-210	0.5	E	M	L/S

Goal. Introduction to upper air observational equipment and procedures.

Requirement. Identify and state use of the components and apply procedures required for taking an upper air observation.

(1) Identify the following components:
    (a) UMQ 12.
    (b) UMQ 12 antenna.
    (c) Radiosonde.
    (d) Required weight sets.
(2) State the use of the following components:
    (a) UMQ 12.
    (b) UMQ 12 antenna.
    (c) Radiosonde.
    (d) Required weight sets.
(3) Read and comprehend procedures for conducting upper air observations.

Performance Standard. Demonstrate knowledge of components prior to conducting an upper air observation.

UAS-211	1.0	E	G,M,N	L

Goal. Decode upper air messages.

Requirement. Decode upper atmospheric soundings and exhibit an understanding of the scales and features of a Skew-T Log P diagram.

(1) Decode upper atmospheric sounding per applicable references.
(2) Identify scales and use of scales located on the Skew-T, Log P diagram.

Performance Standard. Decode upper atmospheric soundings and components of the Skew-T Log P diagram.

UAS-212	0.5		E	G,M	L

Goal. Setup a theodolite.

Requirement. Apply procedures for conducting PIBAL observations. Visually identify and state the use of:

(1) Theodolite.
(2) Plotting board or appropriate software.
(3) Appropriate balloon based on sky condition.
(4) Required weight sets.
(5) Appropriate conversion tables.

Performance Standard. Demonstrate proficiency by identifying equipment components and purposes while explaining the procedures for conducting PIBAL observations.

UAS-213	2.0	R	E	M	L/S

Goal. Conduct an upper-atmospheric sounding.

Requirement. Utilizing the AN/UMQ-12, the appropriate balloon, and mini-rawinsonde, successfully receive and process data from the surface to 100 mb.

(1) Energize AN/UMQ-12.
(2) Prepare balloon and sonde.
(3) Enter the surface observation and coefficients.
(4) Tune radiosonde.
(5) Compare readings with current surface observation.
(6) Ensure adequate satellite synchronization.
(7) Obtain clearance and launch sounding.
(8) Post process sounding.
(9) Save data to appropriate location.
(10) Encode and disseminate alphanumeric data as appropriate.

Performance Standard. Complete requirement utilizing FMH #3 – Rawinsonde and PIBAL Observations, a minimum of three times.

Prerequisite. UAS-210 and UAS-211.

UAS-214	1.0	R	E	G,M,N	L

Goal. Plot and analyze a Skew-T Log P diagram.

Requirement. Utilizing a blank Skew-T diagram and/or appropriate software and upper air sounding, plot and analyze upper-air data. Perform the following:

(1) Obtain Upper Air Observation Data.
(2) Plot mandatory levels, significant levels, and significant wind data.
(3) Analyze the following:
    (a) CCL.

(b) LCL.
(c) LFC.
(d) PEA.
(e) NEA.
(f) SSI.
(g) T1.
(h) T2.
(i) Forecasted maximum temperature.
(j) Forecasted minimum temperature.
(k) Freezing level.
(l) Contrails.
(m) Tropopause.

Performance Standard. Within a 30 minute period, plot and analyze a Skew-T Log P diagram without error.

Prerequisite. UAS-211.

UAS-215	1.0	R	E	G,M	L

Goal. Conduct a PIBAL observation.

Requirement. Utilizing a theodolite and the appropriate balloon, per local regulations, track a balloon until no longer visible. Complete the following:

(1) Determine size and color of balloon.
(2) Assemble, level and orientate the theodolite.
(3) Launch balloon.
(4) Annotate entries every 60 seconds on form.
(5) Use current software to enter elevation and azimuth (Manual devices may be substituted if available).
(6) Retrieve, encode and disseminate.

Performance Standard. Per FMH #3 – Rawinsonde and PIBAL Observations, accurately track a pibal and compute (manually or automated) flight level wind speed and direction a minimum of five times.

Prerequisite. UAS-212.

3. Oceanographic and Hydrological Services (OHS)

a. Purpose. To acquire proficiency in the observation of required recording procedures and the dissemination of oceanographic and hydrological elements utilizing applicable equipment.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at observing, recording and disseminating oceanographic surface observations. Personnel shall also be familiar with necessary oceanographic and hydrographic elements or concepts that support mission requirements.

c. Ground/Academic Training. Local mission and operating procedures will

dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (2 Events, 12.0 Hours).

OHS-220	2.0	E	G,M,N	L

Goal. Certify proficiency at calculating tidal data.

Requirement. Calculate tidal data for five specified locations utilizing available equipment and software.

Performance Standard. Calculate tidal data per applicable references.

OHS-221	10.0	E	G,M,N	L/S

Goal. Introduce oceanographic and littoral warfare products.

Requirement. Gain familiarity with the content and orders/directives governing the preparation and use of the following oceanographic/littoral warfare products:

(1) Sea Surface Temperature Charts.
(2) Current and Tidal Carts.
(3) Modified Surf Index.
(4) Beach Survey Charts.
(5) Specialized Analyzed Image Littoral (SAIL).
(6) Specialized Tactical Oceanographic Information Chart (STOIC).
(7) Rapid Environmental Assessment Chart Tactical (REACT).
(8) Riverine Survey Charts.

Performance Standard. Without error, identify, describe and locate references governing each product listed above.

4. Applied Meteorological Science (AMS)

a. Purpose. To introduce the fundamental principles of the atmosphere required to produce mission specific products.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall possess and demonstrate proficiency in meteorological fundamentals.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (11 Events, 65.5 Hours).

AMS-225	15.0	E	N/A	L/S

Goal. Comprehend atmospheric physics.

Requirement. Understand fundamental concepts of the following subjects:

(1) Atmospheric structure.
(2) Atmospheric variables.
(3) Vectors.
(4) Pressure.
(5) Temperature and moisture.
(6) Fundamentals of atmospheric concepts.
(7) Advection.
(8) Thermal winds.
(9) Thickness charts.
(10) Heat transfer.
(11) Cloud formation and dissipation.
(12) Precipitation types.

Performance Standard. With an 80% accuracy, define the subjects listed and state how each subject affects the other.

AMS-226	15.0	E	N/A	L/S

Goal. Comprehend atmospheric dynamics.

Requirement. Understand fundamental concepts of the following subjects:

(1) Rotational and circular motion.
(2) Atmospheric forces.
(3) Divergence/convergence.
(4) Vorticity.
(5) Jet streams.
(6) Atmospheric wave terminology.
(7) 500mb heights and vorticity chart.
(8) Vertical motions.
(9) Air masses.
(10) Frontal systems.
(11) Evolution of frontal systems.
(12) Synoptic scale systems.
(13) Evolution of synoptic scale baroclinic systems.
(14) Local modification to large-scale circulations.

Performance Standard. Explain each of the concepts listed and state the development and dissipation processes, where applicable to an 80% accuracy.

Prerequisite. AMS-225.

AMS-227	5.0	R	E	N/A	L

Goal. Comprehend atmospheric fundamentals.

Requirement. Verbally define and discuss the atmospheric fundamentals listed below during a technical discussion with qualified METOC personnel.

(1) Long/short wave trough/ridges.
    (a) Deepening/building/intensifying.
    (b) Filling/weakening.
    (c) Cyclogenesis/frontogenesis.
    (d) Cyclolysis/frontolysis.
(2) Pressure systems.
    (a) Baroclinic/barotropic.
    (b) Warm/cold air advection.
    (c) Dry/moist air advection.
(3) Frontal systems.
    (a) Active/inactive cold fronts.
    (b) Active/inactive warm fronts.
    (c) Stationary fronts.
    (d) Warm/Cold occlusions.
    (e) Type “A”/”B” occlusions.
(4) Jet features.
    (a) Polar front jet stream.
    (b) Subtropical jet stream.
    (c) Conduction/radiation/advection/convection.
(5) Vorticity.
(6) Thickness.
(7) Condensation/evaporation/sublimation.
(8) Convergence/confluence.
(9) Divergence/diffluence.
(10) Types of baroclinic/barotropic low-pressure systems.
(11) Types of baroclinic/barotropic high-pressure systems.
(12) Gradient wind.
(13) Geostrophic wind.
(14) Relative/absolute/specific humidity.
(15) Pressure gradient.
(16) Cloud identification/formation.

Performance Standard. With an 80% accuracy, discuss 10 topics assigned by the METOC Analyst Instructor from the topics listed in the requirement and respond to questions posed.

Prerequisite. AMS-225, AMS-226.

AMS-228	2.0	E	G,M,N	L/S

Goal. Comprehend Global and Regional METOC models.

Requirement: Identify and state the strengths and weaknesses for each numerical model applicable to a given AOR.

Performance Standard. Retrieve a given numerical model and accurately identify its strengths and weaknesses.

Prerequisite. AMS-227.

AMS-229	2.0	E	G,M,N	L/S

Goal. Initialize and verify meteorological model output.

Requirement. Verify meteorological model output by identifying strengths and weaknesses of global, regional, and mesoscale numerical models.

Performance Standard. Through practical application, initialize and verify model output with 12/24/48/72 analyses with an 80% accuracy.

Prerequisite. AMS-228.

AMS-230	20.0	E	G,M,N	L/S

Goal. Graphical METOC product familiarization.

Requirement. Define the graphical METOC products listed below:

(1) Horizontal/vertical weather depiction.
(2) Satellite imagery.
(3) Radar imagery.
(4) Surface chart.
(5) Upper Air Charts.
(6) Oceanographic Charts.
(7) Tropical Weather Charts.
(8) Vorticity Charts.
(9) Thickness Charts.

Performance Standard. Define the use of each chart listed above. Identify and explain the various meteorological features with an 80% accuracy.

Prerequisite. AMS-227.

AMS-231	2.0	R	E	G,M,N	L

Goal. Forecast synoptic scale systems.

Requirement. Given required charts, forecast intensity and movement of surface and upper-level features listed for the following:

(1) Major short wave troughs/ridges.
(2) High and low pressure system(s).
(3) Moisture.
(4) Frontal systems.
(5) Weather elements.
(6) Long wave patterns.
(7) Jet streams.

Performance Standard. Provide meteorological justification for forecast placement.

Prerequisite. AMS-227, AMS-230.

AMS-232	1.0	R	E	G,M,N	L

Goal. Forecast severe weather.

Requirement. Given required charts and a designated area of responsibility (AOR), analyze and forecast for the severe weather elements listed and provide meteorological reasoning for each:

(1) Convective phenomena.
(2) Non-convective phenomena.

Performance Standard. Derived forecast must display sound meteorological reasoning.

Prerequisite. AMS-231.

AMS-233 0.5 E G,M,N L/S

Goal. Forecast local area (mesoscale/microscale) meteorological elements and phenomenon.

Requirement. Utilize local, regional, and global meteorological models to assess and determine the current and forecast meteorological elements. Prepare a local area forecast for a 96-hour period. At a minimum forecast for the following:

(1) Cloud types, height and coverage.
(2) Precipitation types and probability.
(3) Surface visibility.
(4) Weather and obstruction(s) to visibility.
(5) Maximum/Minimum temperatures.
(6) Wind Speed, Direction, and character.
(7) Icing type, height, and intensity.
(8) Turbulence type, height, and intensity.
(9) Atmospheric pressure.

Performance Standard. Derived forecast must display sound meteorological reasoning.

Prerequisite. AMS-231, AMS-232.

AMS-234 2.0 E G,M,N L

Goal. Forecast tropical cyclone development and movement.

Requirement. METOC products (live or canned data) and under conditions for tropical development, analyze for tropical cyclone development, movement, and intensity. Compute a 96-hour prognostic for movement/intensity of the system.

(1) Interpret cyclone warnings and advisories.
(2) Modify computer generated tropical cyclone models and available centrally prepared products based on climatological summaries of cyclone storm tracks, forecasting rules, and local area requirements.
(3) Forecast tropical cyclone development, movement, and intensity using satellite data and other applicable products.
(4) Interpret METOC data parameters.
(5) Prepare a brief to include on a minimum:
    (a) Recommendation to cyclone conditions of readiness.
    (b) Cyclone categories.
    (c) Impacts to cyclone evacuation plan.
    (d) Impacts based on cyclone storm surge forecasts.

Performance Standard. Meet requirements per local METOC SOP. Repetition of tasks shall be carried out until an 80% accuracy level is achieved in content and format.

Prerequisite. AMS-231, AMS-232, AMS-233.

AMS-235	1.0	E	G,M,N	L

Goal. Produce a limited data forecast.

Requirement. Given three METOC products and a location, write a plain language forecast for a period of 48 hours and verify for accuracy.

Performance Standard. The elements of the forecast shall be verified to an 80% accuracy.

Prerequisite. AMS-227.

5. Meteorological Doppler Radar (MDR)

a. Purpose. To become proficient in the basic operation of the Doppler Weather Radar and knowledge of atmospheric features on available Doppler products.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be proficient at analyzing and interpreting radar products while demonstrating basic radar operations.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (3 Events, 17.0 Hours).

MDR-240	2.0	E	G,M,N	L/S

Goal. Perform basic meteorological radar system(s) operations.

Requirement. Given a meteorological radar and applicable operating manuals, display a working knowledge of radar operations. Complete the following tasks:

(1) Conduct power up/power down procedures.
(2) Conduct log on/log off functions.
(3) Display radar products.
(4) Monitor system performance.
(5) Archive ingested data.
(6) Retrieve and display archived data.

Performance Standard. Completion of the requirement without violating system integrity, configuration or communications.

MDR-241	5.0	R	E	G,M,N	L/S

Goal. Perform basic radar imagery interpretation.

Requirement. Utilizing live or archived base radar products, identify the following features:

(1) Base reflectivity:
    (a) Precipitation.
    (b) Thunderstorms.
    (c) Outflow boundaries.
(2) Base velocity:
    (a) Convergence and divergence.
    (b) Cyclonic and anticyclonic rotation.
(3) Base spectrum width products:
    (a) Significant motion.
    (b) Turbulence.

Performance Standard. Retrieve specified product and identify, at a minimum, the features designated by the requirement.

Prerequisite. MDR-240.

MDR-242	10.0	R	E	G,M,N	L

Goal. Perform advanced radar imagery interpretation.

Requirement. Utilizing live or archived derived radar products, identify the following features:

(1) Tight reflectivity gradients.
(2) Line Echo Wave Patterns (LEWP).
(3) Mid-level overhang.
(4) Weak echo region (WER).
(5) Bounded weak echo region (BWER)
(6) Mesocyclones.
(7) Tornadic Vortex Signatures (TVS).
(8) Freezing levels.
(9) Base reflectivity and velocity cross-sections.
(10) Gate-to-gate shear.
(11) Anomalous propagation.
(12) Range-folding.
(13) Radar (sun) spikes.

Performance Standard. Complete requirement until all steps are completed without error.

Prerequisite. MDR-241.

6. METOC Satellite (MSAT)

a. Purpose. To become proficient in the basic operation of the available weather satellite system(s) and knowledge of atmospheric features on available on satellite imagery.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be proficient at analyzing and interpreting satellite products while demonstrating basic satellite operations.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (3 Events, 8.0 Hours).

MSAT-245	2.0		E	G,M,N	L/S

Goal. Analyze meteorological features on satellite imagery.

Requirement. Utilizing current satellite imagery, correctly identify synoptic and/or mesoscale meteorological features:

(1) Areas of high pressure.
(2) Areas low pressure.
(3) Frontal boundaries.
(4) Thunderstorms.
(5) Basic and significant cloud elements.
(6) Jet streams.
(7) Land/terrain features.
(8) Non-cloud features (i.e. smoke, dust).
(9) Significant weather phenomena.

Performance Standard. Discuss the identification of the features and uses of the analyzed features with an 80% accuracy.

MSAT-246	5.0		E	G,M	L/S

Goal. Perform advanced operations on available satellite system.

Requirement. Utilizing the available equipment and manuals, perform the listed tasks:

(1) Transfer satellite imagery product to database.
(2) Perform archive product function.
(3) Perform zoom functions.
(4) Execute loop functions.
(5) Execute pre-established product set enhancement curves.
(6) Perform color scale adjustments for product display.

Performance Standard. Physically demonstrate requirement tasks with an 80% accuracy.

MSAT-247	1.0	R	E	G,M,N	L

Goal. Analyze and interpret satellite imagery.

Requirement. Given a satellite image, determine and state the type of satellite imagery and apply analytical techniques to depict the features listed:

(1) Jet streams.
    (a) Location of jet streams.
    (b) Type of jet streams.
(2) High and low circulation center locations.
(3) Cloud types.
(4) Frontal systems, troughs and ridges.
(5) Land/terrain features.
(6) Significant weather phenomena.
    (a) Thunderstorms.
    (b) Squall lines.
(7) Tropical features.
    (a) Tropical cyclones.
    (b) Tropical upper tropospheric troughs.

Performance Standard. Complete the requirement within one-hour through practical application and discuss reasoning for feature placement to an 80% accuracy.

Prerequisite. MSAT-245.

7. METOC Climatological and Astronomical Services (MCS)

a. Purpose. To develop proficiency at deriving climatological and astronomical data.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be able to compute or retrieve astronomical or Climatological data.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (2 Events, 6.0 Hours).

MCS-250	1.0	E	G,M,N	L

Goal. Calculate astronomical data.

Requirement. Utilizing available equipment and software, calculate solar and lunar data for five specified locations.

Performance Standard. Input and produce appropriate data to an 80% accuracy.

MCS-251	5.0	E	G,M,N	L/S

Goal. Generate astronomical and climatological data.

Requirement. Given mission parameters and appropriate software or forms, generate astronomical, tidal, and climatological data for the five locations.

Performance Standard. The specified locations shall be in differing countries. Data shall be verified for accuracy.

8. Warnings, Watches and Advisories (WWA)

a. Purpose. To acquire proficiency in obtaining and disseminating weather warnings, watches, or advisories as mandated by requirements.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at disseminating appropriate METOC warnings and advisories.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (5 Events, 6.75 Hours).

WWA-255	2.0		E	G,M,N	L/S

Goal. Weather warning and advisory familiarization.

Requirement. Become familiar with weather warnings and advisories, the content of each, and the forecasting techniques to determine required warning and/or advisory.

Performance Standard. Define and discuss per OPNAVINST 3140.24_.

WWA-256	2.0	R	E	N/A	L

Goal. State weather warning and advisory criterion.

Requirement. State the local criteria for weather warnings and advisories to include, but not limited to:

(1) Thunderstorm warnings.
(2) Severe thunderstorm warnings/watches.
(3) Tornado warnings/watches.
(4) Wind warnings.
(5) Storm warning.
(6) Gale warning.
(7) Flood warning.
(8) Flash flood warning.
(9) Freeze/Hard freeze warning.
(10) Small craft warnings/advisories.
(11) Lightning warnings.

Performance Standard. Define warning criteria per OPNAVINST 3140.24_ and local directives.

WWA-257	2.0	E	G,M,N	L/S

Goal. Be proficient in procedures for issuing weather warnings and advisories.

Requirement

(1) Define criteria for setting weather warnings and advisories.
(2) State processes for issuing weather warnings or advisories.

Performance Standard. Complete the requirement per OPNAVINST 3140.24_ and local operating procedures.

Prerequisite. WWA-256.

WWA-258	0.5	E	G,M,N	L/S

Goal. Disseminate weather warnings.

Requirement. Given a weather warning or advisory (live or simulated), disseminate the weather warning.

Performance Standard. Disseminate the weather warning or advisory to all units per local policies and procedures.

Prerequisite. WWA-257.

WWA-259	0.25	E	G,M,N	L

Goal. Display meteorological weather warnings/advisories.

Requirement. Given warning or advisory data and appropriate chart or software, plot the warning data.

(1) Select the scale.
(2) Plot the warning.
(3) Check plots for accuracy.

Performance Standard. Within 20 minutes of warning issuance, plot warning or advisory without error.

9. METOC Data Analysis (MDA)

a. Purpose. To develop proficiency in the analysis of basic atmospheric features on present atmospheric charts.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at analyzing and interpreting surface and atmospheric phenomena.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (8 Events, 23.0 Hours).

MDA-260	0.5	E	G,M,N	L

Goal. Analyze and interpret a thickness chart.

Requirement. Given a SFC-500mb thickness chart, analyze and depict the features listed:

(1) Warm/cold air advection.
(2) High and low pressure centers.
(3) Fronts.
(4) 540 Dam line.
(5) Troughs.
(6) Label air masses.
(7) Jet stream.

Performance Standard. Complete requirement within 30 minutes of chart receipt. Discuss meteorological reasoning for placement of features to an 80% accuracy.

Prerequisite. AMS-227, AMS-231, AMS-232.

MDA-261	0.5	E	G,M,N	L

Goal. Analyze and interpret a vorticity chart.

Requirement. Given a 500mb vorticity chart, analyze and depict the following features:

(1) Positive/negative vorticity areas.
(2) Shear lobes.
(3) Advection lobes.
(4) Jet stream.
(5) X-N distribution.

Performance Standard. Complete requirement within 30 minutes of chart receipt. Explain meteorological reasoning for placement of features to an 80% accuracy.

Prerequisite. AMS-227, AMS-231, AMS-232.

MDA-262	6.0	E	G,M,N	L

Goal. Analyze and interpret upper atmospheric weather charts.

Requirement. Within 6 hours and given atmospheric charts, analyze the mandatory level constant pressure charts for features listed below:

(1) Isoheights.
(2) Isotherms.
(3) Areas of significant moisture.
(4) Major short wave axis, troughs and ridges.
(5) Minor short wave axis, troughs and ridges.
(6) High and low height centers.
(7) Warm and cold pockets.

(8) Upper fronts.
(9) Jet stream features.

Performance Standard. Upon completion of analysis, explain meteorological reasoning for placement of features to an 80% accuracy.

Prerequisite. MDA-260, MDA-261.

MDA-263 1.0 R E G,M,N L

Goal. Analyze and interpret a surface pressure chart.

Requirement. Given a surface chart, depict the following features:

(1) Isobars.
(2) High and low pressure centers.
(3) Fronts.
(4) Highlight weather symbols.
(5) Troughs.
(6) Label air masses.
(7) Dry lines.
(8) Isallobars.
(9) Isodrosotherms.
(10) Identify outflow boundaries.
(11) Nephanalysis.

Performance Standard. Complete requirement within 45 minutes of chart receipt and explain meteorological reasoning for placement of features with an 80% accuracy.

Prerequisite. MDA-260, MDA-261, MDA-262.

MDA-264 10.0 R E G,M,N L/S

Goal. Develop synoptic scale forecast using prognosis techniques.

Requirement. Analyze centrally prepared products, apply academic principles, and forecast synoptic scale features by completing the listed items:

(1) Initialize model data.
(2) Analyze or re-analyze:
    (a) Surface chart.
    (b) Thickness chart.
    (c) Vorticity.
    (d) Standard Upper Air chart set.
    (e) Satellite imagery.
    (f) Radar imagery.
    (g) Weather depiction charts.

(3) Develop forecasted intensity and location of weather features.
(4) Discuss meteorological reasoning for forecasted elements.

Performance Standard. Identify, depict and provide technical reasoning for meteorological features depicted to an 80% accuracy.

Prerequisite. MDA-260, MDA-261, MDA-262, MDA-263.

MDA-265 2.0 E G,M,N L/S

Goal. Introduce elements forecasted from a plotted Skew-T Log P Diagram.

Requirement. Discuss and define elements that can be forecasted from the Skew-T Log P diagram:

(1) Thunderstorm probability.
(2) Maximum and minimum temperatures.
(3) Turbulence.
(4) Icing.
(5) Hail size.
(6) Convective gusts.
(7) Fog dissipation.
(8) Contrails.
(9) Cloud types and coverage.
(10) Precipitation.

Performance Standard. State procedures for properly forecasting elements listed per the applicable references.

Prerequisite. AMS-227, AMS-231, AMS-232.

MDA-266 2.0 R E G,M,N L

Goal. Analyze atmospheric conditions from the Skew-T, Log P diagram.

Requirement. Analyze a Skew-T, Log P diagram for elements listed:

(1) Compute indices.
    (a) Lifted index.
    (b) K index.
    (c) Sweat index.
    (d) Showalter’s index.
    (e) Total totals.
(2) Analyze negative/positive energy areas.
(3) Analyze for equilibrium levels.
(4) Compute turbulent areas.
(5) Analyze Potential temperature.
(6) Compute contrails.
(7) Compute icing types and levels.
(8) Compute maximum and minimum temperatures.
(9) Compute hail.
(10) Compute thunderstorm gusts.
(11) Analyze freezing level.
(12) Analyze for areas of moisture.
(13) Compute D-Values.
(14) Compute relative humidity.

Performance Standard. State how derived values and/or elements apply to forecasting atmospheric conditions.

Prerequisite. MDA-265.

MDA-267	1.0	R	E	G,M,N	L

Goal. Conduct a streamline analysis.

Requirement. Given a wind chart, conduct a streamline analysis denoting the following features:

(1) Streamlines.
(2) Asymptotes (convergent/divergent).
(3) Neutral points.
(4) Cyclonic and anti-cyclonic centers.
(5) Isotachs.
(6) Wind maximums and minimums.

Performance Standard. Complete within 1-hour and without violating analysis rules.

10. METOC Product Briefing (MPB)

a. Purpose. To develop proficiency in the techniques and tactics used to verbally present current and future states of the atmosphere.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at conducting METOC briefings in support of mission requirements.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (2 Events, 5.0 Hours).

MPB-270	3.0		E	G,M,N	L

Goal. Brief METOC features from (re)analyzed products.

Requirement. Brief meteorological features depicted on the following products:

(1) Surface chart.
(2) Constant pressure charts.

Performance Standard. Conduct one synoptic scale brief utilizing listed products with 6-hours. Upon completion of briefing, explain meteorological reasoning for placement of features.

Prerequisite. MDA 200 stage.

MPB-271	2.0	R	E	G,M,N	L/S

Goal. Brief synoptic chart set.

Requirement. Utilizing an analyzed chart set, brief meteorological features from the following products:

(1) Surface chart.
(2) Upper air charts:
    (a) 850mb.
    (b) 700mb.
    (c) 500mb.
    (d) 300 or 200mb.
(3) Support charts:
    (a) Satellite Imagery.
    (b) Vorticity.
    (c) 1000-500mb Thickness.

Performance Standard. Conduct brief until individual demonstrates mastery of sound atmospheric fundamentals.

Prerequisite. MDA-264.

11. MAGTF Forecast Support (MFS)

a. Purpose. To acquire proficiency in forecasting routine aviation support elements and products.

b. General

(1) Completion of MCWO or AFWAC is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at forecasting and disseminating METOC information in support of mission requirements.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (4 Events, 32.5 Hours).

MFS-275	0.5		E	G,M,N	L

Goal. Encode and disseminate pilot reports (PIREPs).

Requirement. Given a PIREP and appropriate forms, correctly encode and disseminate the PIREP within 10 minutes of receipt. Perform the following:

(1) Receive PIREP via available communication device.
(2) Annotate the data on the correct form.
(3) Disseminate the PIREP.

Performance Standard. Conduct the requirement a minimum of 10 times per NAVMETOCCOMINST 3142.1_.

MFS-276	26.0	R	E	G,M,N	L

Goal. Produce Terminal Aerodrome Forecast (TAF).

Requirement. Use available meteorological data to assess and interpret meteorological conditions to produce a TAF.

Performance Standard. Complete requirement a minimum of 26 times per NAVMETOCCOMINST 3143.1_. MAI will ensure 50% of the TAFS are for a location, other than their current location, to an 80% verification of weather elements.

MFS-277	2.0		E	G,M,N	L/S

Goal. Generate Optimum Path Aircraft Routing System (OPARS) products.

Requirement. Given mission parameters and appropriate software or forms, generate OPARS support products for five routes of flight.

Performance Standard. OPARS products shall be evaluated for accuracy of output based on given mission parameters.

Prerequisite. Read and understand OPARS User's Manual.

MFS-278	4.0		E	G,M,N	L/S

Goal. Introduce flight weather products.

Requirement. Gain familiarity with the content and orders governing preparation and use of the following flight weather products:

(1) DD 175-1 flight weather briefing.
(2) Flight Weather Folder.
(3) Squadron Briefings.
(4) Aviation Strike Brief.
(5) Convective Sigmets/Airmets.
(6) Non-Convective Sigmets/Airmets.

Performance Standard. Identify and locate references governing each product listed without error.

133. CORE SKILL ADVANCED TRAINING

1. Oceanographic and Hydrological Services (OHS)

a. Purpose. To demonstrate proficiency in the principles of oceanography required to produce mission specific support.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at observing, forecasting and disseminating oceanographic information and products.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (4 Events, 7.0 Hours).

OHS-300	0.5	R	E	G,M,N	L/S

Goal. Conduct surf observations.

Requirement. Utilize appropriate timing device and temperature sensing equipment to observe and annotate a surf observation. Perform the following:

(1) Determine point of observations.
(2) Determine and annotate:
    (a) Significant breaker height.
    (b) Maximum breaker height.
    (c) Period.
    (d) Breaker types.
    (e) Angle of breaker relative to beach.
    (f) Littoral current.
    (g) Surf zone.
    (h) Additional remarks.

Performance Standard. Complete requirement 3 times per the Joint Surf Manual COMNAVSURFPAC/LANT 3840.1_.

Prerequisite. Read the Joint Surf Manual.

OHS-301	5.0	E	G,M,N	L

Goal. Demonstrate knowledge of surf forecasting.

Requirement. Define and explain:

(1) Significant breaker height.
(2) Maximum breaker height.
(3) Breaker period.
(4) Breaker type.
(5) Breaker angle.
(6) Littoral current speed and direction.
(7) Modified surf index.
(8) Wind direction in surf zone.
(9) Obtain beach profile data.

Performance Standard. Per the Joint Surf Manual COMNAVSURFPAC/LANT 3840.1_, define and explain the significance of the listed subjects.

OHS-302	1.0	E	G,M,N	L/S

Goal. Compute Modified Surf Index (MSI).

Requirement. Given mission parameters, forecasted parameters and appropriate software or forms, generate MSI for three separate locations.

Performance Standard. MSI shall be evaluated for format and content per the references prior to awarding completion credit.

OHS-303	0.5	R	E	G,M,N	L

Goal. Create a surf forecast.

Requirement. Utilizing appropriate software and requirements for operations, generate a surf forecast that contains the listed components:

(1) Beach survey.
(2) Significant breaker height.
(3) Maximum breaker height.
(4) Breaker period.
(5) Breaker type.
(6) Breaker angle.
(7) Littoral current speed and direction.
(8) Modified surf index.
(9) Wind direction in surf zone.
(10) Beach profile data.

Performance Standard. Forecast must meet mission requirements and contain the above listed elements. The event shall be repeated until an 80% accuracy exists in content and format.

Prerequisite. OHS-301.

2. Meteorological Doppler Radar (MDR)

a. Purpose. To become proficient in the advanced operation of the Doppler Weather Radar and atmospheric features on available Doppler products.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be capable of performing advanced operations and management functions on meteorological Doppler radar equipment.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (2 Events, 8.0 Hours).

MDR-310	2.0	E	G,M	L/S

Goal. Perform advanced operations on meteorological radar.

Requirement. Given a meteorological radar and applicable manuals, complete advanced operations while maintaining both operator and equipment safety. Perform the following tasks:

(1) Select product type for generation.
(2) Transfer radar product type to database.
(3) Perform:
    (a) Archive product functions.
    (b) Zoom functions.
    (c) Loop functions.
    (d) Three-dimensional (3D) display functions.
    (e) Range height indicator (RHI) applications.
    (f) Color scale adjustments for product display.
    (g) Cross-section functions.
(4) Setup and implement job scheduling of radar products.

Performance Standard. Physically demonstrate the above listed tasks while providing verbal explanations to an 80% accuracy.

MDR-311	6.0	E	M	L

Goal. Conduct management operations for the meteorological radar system.

Requirement. Given a Doppler radar system, applicable operating manuals and understanding the configurations, limitations, and capabilities of Doppler radar systems, display a working knowledge of Doppler radar management functions. Configuration should allow for ingest, analysis, manipulation, and production of derived radar products. Perform, at a minimum, the following tasks:

(1) Ensure configuration is commensurate with desired product generation.
    (a) Pulse repetition frequency.
    (b) Sample rates.
    (b) Gate width.
    (c) Beam width.
    (d) Operating frequency.
    (e) Scanning speeds.
(2) Archive generated products.
(3) Discuss Doppler radar product algorithms and products derived from them.
(4) Ensure Doppler radar products are available through electronic means to the end customer.
(5) Ensure hazards of electromagnetic radiation to fuels (HERF) procedures are implemented and adhered to.
(6) Ensure hazards of electromagnetic radiation to personnel (HERP) procedures are implemented and adhered to.
(7) Ensure hazards of electromagnetic radiation to ordnance (HERO) procedures are implemented and adhered to.

Performance Standard. Conduct the above listed tasks with an 80% accuracy.

3. METOC Satellite (MSAT)

a. Purpose. To become proficient in the advanced operation and management of available meteorological satellite systems.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at performing advanced satellite equipment operations.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (1 Events, 2.0 Hours).

MSAT-320	2.0	E	M	L/S

Goal. Perform advanced operations on tactical satellite system.

Requirement. Given a tactical satellite system, applicable operating manuals, and understanding limitations and capabilities of satellite imagery acquisition and enhancements, display a working knowledge of satellite system operations.

(1) Conduct power up/power down procedures.
(2) Conduct log on/log off functions.
(3) Schedule receipt of imagery.
(4) Update of Ephemeris Data.
(5) Ensure product path for received products is correct.
(6) Ensure naming conventions are adhered to.
(7) Ensure signal decryption values are set for reception of scheduled passes.
(8) Archive imagery for retrieval later.

Performance Standard. Demonstrate completion using practical application.

4. METOC Climatological and Astronomical Services (MCS)

a. Purpose. To demonstrate familiarity with Marine Corps METOC support architecture, missions and local operating procedures.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be proficient at briefing Climatological data in support of mission requirements.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (1 Events, 12.0 Hours).

MCS-330	12.0	R	E	G,M,N	L/S

Goal. Generate a climatology brief.

Requirement. Research and prepare a three-month climatology brief for a specified location. Elements to be included in the brief include, but are not limited to, the following:

(1) Overview.
(2) Geography.
(3) Terrain.
(4) Oceanography.
(5) Astronomical.
(6) Seismic activity.
(7) Specific weather elements, if applicable:
    (a) Relative humidity.
    (b) Temperature.
    (c) Thunderstorms/precipitation.
    (d) Prevailing winds.
    (e) Sky condition.
    (f) IFR/VFR/Marginal VFR percentages.
    (g) Ice thickness and flow.
    (h) Volcanic activity.

Performance Standard. Presentation shall be completed within 12 hours. It is recommended that the designated location or AOR for the climatology presentation be located in a foreign and/or unfamiliar country.

5. METOC Product Briefing (MPB)

a. Purpose. To demonstrate advanced proficiency in the techniques and tactics used to verbally present current and future states of the atmosphere.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be able to accurately and competently present the full range of METOC briefings to appropriate audiences.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (5 Events, 23.5 Hours).

MPB-340 2.5 E G,M,N L/S

Goal. Conduct METOC training briefs.

Requirement. Prepare and conduct each brief once. Preparation time for each brief is one week. Develop and brief specialized/tailored weather briefs listed below, but not limited to:

(1) Instrument Ground School (IGS) brief.
(2) Seasonal weather briefs.
(3) Holiday/travel Briefs.
(4) Special events.
(5) METOC capabilities brief.

Performance Standard. Content and verification of forecasted elements are subjective and shall be verified for accuracy.

MPB-341 3.0 R E G,M,N L/S

Goal. Conduct an Aviation Strike Brief.

Requirement. Prepare and conduct an aviation (mission specific) strike weather brief within 3-hours. Include the following information:

(1) Nephanalysis.
(2) Enroute weather.
    (a) Sky condition.
    (b) Weather.
    (c) Visibility/Slant range visibility (NM).
    (d) Sea surface temperature/in-water survival time.
    (e) Winds.
    (f) Temperatures.
    (g) Turbulence.
    (h) Icing.
    (i) Contrail formation.
    (j) Ditch heading.
(3) Target Area Weather (repeat for each area).
    (a) Sky condition.
    (b) Weather.
    (c) Visibility/slant range visibility (NM).
    (d) Surface winds.
    (e) Maximum/minimum temperatures.
    (f) Cloud tops/ceilings.
    (g) Freezing level.
    (h) D-Values.
(4) Astronomical Data.
    (a) Sunrise/Sunset.
    (b) Sun elevation angles/azimuth.
    (c) Beginning/ending civil/nautical twilights.
    (d) Moonrise/moonset.
    (e) Lunar illumination.
    (f) Moon angles elevation/azimuth.
    (g) Lux values.
(5) 48-hour outlook.
(6) Tactical assessment.

(7) Electro-Optical sensor performance predictions.

Performance Standard. Complete briefing within 24 hours of receipt of RFI per MCWP 3-35.7.

MPB-342	2.0	E	G,M,N	L/S

Goal. Conduct a Search And Rescue (SAR) brief.

Requirement. Prepare and conduct the following:

(1) Current and forecast weather information for predetermined areas of operation.
(2) Provide mission planning forecasts to include, but not limited to:

    (a) Water temperatures.
    (b) Drift data.
    (c) Survival times.
    (d) Current speed and direction.

Performance Standard. Complete the briefing within 2 hours of receipt of RFI per MCWP 3-35.7.

MPB-343	15.0	E	G,M,N	L/S

Goal. Conduct a climatology brief.

Requirement. Prepare and conduct a 3-month climatology brief that includes:

(1) Overview.
(2) Geography.
(3) Terrain.
(4) Operational interests (if applicable).
(5) Oceanography.
(6) Astronomical.
(7) Seismic activity.
(8) Historical EM conditions.
(9) General climate.
(10) Specific weather elements (if applicable).
     (a) Relative humidity.
     (b) Thunderstorms/precipitation.
     (c) Prevailing winds.
     (d) Sky condition.
     (e) IFR/VFR/Marginal VFR percentages.
     (f) Assessments and recommendations.
(11) Hydrology (as required).

Performance Standard. Generate brief within 48 hours of receipt of RFI per MCWP 3-35.7.

MPB-344	1.0	E	N/A	L/S

Goal. Familiarization with environmental impact briefings and reporting procedures.

Requirement. Discuss the products listed:

(1) Volcanic eruption.
(2) Tidal wave/tsunami.
(3) Avalanches.
(4) Earthquakes (reports).

Performance Standard. Demonstrate basic understanding of events and describe the product customer relationship.

6. MAGTF Forecast Support (MFS)

a. Purpose. To acquire proficiency in forecasting routine aviation support elements and products.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be proficient in developing, then delivering, forecasts within the context of the mission support requirements.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (3 Events, 9.5 Hours).

MFS-345	3.5	R	E	N/A	L/S

Goal. Demonstrate proficiency in flight weather briefings.

Requirement. Given a DD-175 or flight weather request, graphic METOC products, alphanumeric meteorological products, appropriate software and hardware, prepare a minimum of 20 flight weather briefings and 5 VFR Stamp flight weather briefings.

Performance Standard. Requirement must be met within a reasonable timeframe (average of 10-20 minutes, but may vary dependant upon the situation) per NAVMETOCCOMINST 3140.14_. Specific criteria for content are:

(1) Sky conditions (within 500 feet of actual arrival conditions).
(2) Visibility (within 1 mile of the actual arrival conditions).
(3) Type and character of precipitation or obstruction to visibility.
(4) Wind direction (within 30 degrees if wind speed greater than six knots of actual arrival conditions).
(5) Wind speed (within 5 knots of actual conditions).
(6) Altimeter setting (within 2 in. of mercury of actual arrival conditions).

MFS-346	2.0	R	E	N/A	L/S

Goal. Produce flight weather packets.

Requirement. Given a flight weather packet request, prepare and brief a flight weather packet.

Performance Standard. Flight weather packet must be in accordance with NAVMETOCCOMINST 3140.14_, be completed within 2 hours, and be accomplished a minimum of five times.

Prerequisite. MFS-345.

MFS-347	4.0	E	G,M,N	L/S

Goal. Produce mission specific meteorological products that support MAGTF operations.

Requirement. Prepare products listed and discuss the content thereof:

(1) Chemical downwind message.
(2) Blast forecast.
(3) Drop zone forecast.
(4) Sound propagation forecast.
(5) Any other forecasted products requested by the commander.

Performance Standard. Product content must be in accordance with applicable orders.

7. METOC Planning/Coordination (MPC)

a. Purpose. To demonstrate familiarity with the coordination of Marine Corps METOC support.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at performing METOC functions that aid mission planning and support requirements.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (4 Events, 40.0 Hours).

MPC-350	16.0	R	E	N/A	L

Goal. Embarkation of the MetMF(R).

Requirement. Embark the MetMF(R) to a designated area. Perform the following:

(1) Supervise pack up of the MetMF(R).
(2) Supervise lift.
(3) Transport classified materials.
(4) Unpack the MetMF(R) at a designated area.
(5) Establish METOC support.

Performance Standard. Successful embarkation procedures conducted in compliance with applicable references.

External Support Syllabus. Heavy equipment and transport.

MPC-351 2.0 E N/A L

Goal. Demonstrate proficiency with deployment requirements and procedures.

Requirement. Given a simulated METOC deployment scenario, perform the following tasks per the LOI:

(1) Identify embarkation requirements.
(2) Identify communication requirements.
(3) Identify METOC support requirements.
(4) Identify personnel requirements.
(5) Identify equipment support procedures.

Performance Standard. Task must be completed per applicable references.

MPC-352 6.0 E N/A L

Goal. Be familiar with METOC logistics and external support requirements.

Requirement. Comprehend the listed logistical and external support programs and requirements:

(1) Hazardous materials (HAZMAT).
(2) Marine Aviation Logistics Squadron (MALS) support structure.
(3) Mobile facility lift and transportation requirements.
(4) Time Phased Force Deployment Data (TPFDD).
(5) Equipment Density Lists (EDL).

Performance Standard. Identify and discuss logistical and external support per orders and regulations governing logistical support program(s).

MPC-353 16.0 R E N/A L

Goal. Introduce Defense Messaging System (DMS).

Requirement. Identify content and format for the messages listed:

(1) Casualty Reports (CASREP).
(2) Weather Forecast (WEAX).
(3) Joint Operational Area Forecast (JOAF).
(4) Tactical Atmospheric Summary (TAS).

(5) Assault Forecast (ASLTFCST).
(6) Amphibious Objective Area Forecast (AOAFCST).
(7) Strike Forecast (STRKFCST).
(8) Chemical Downwind Message (CDM).

Performance Standard. Message must comply with applicable references.

8. METOC Impact Assessment (MIA)

a. Purpose. To demonstrate advanced knowledge of the processes and products that assist in providing assessment of atmospheric conditions to mission specific support requirements.

b. General

(1) The Core Skill Basic phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at providing commanders an accurate assessment of METOC impacts to MAGTF operations.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (9 Events, 29.0 Hours).

MIA-360	1.0	E	N/A	L

Goal. Be familiar with products and sources for assessment of METOC impacts on MAGTF operations.

Requirement. Given a mission, state the sources and products required for assessing meteorological impacts on a specified mission.

Performance Standard. Verbally identify sources and products for assessing METOC impacts with an 80% accuracy.

MIA-361	2.0	E	N/A	L

Goal. Oceanographic forecasting and impact assessment familiarization.

Requirement. Identify and discuss products used for deriving forecasts for the oceanographic elements listed below and assess the impacts on operations:

(1) Sea state.
(2) Tidal data.
(3) Breaker types and heights.
(4) Fetch areas.
(5) Swells.
(6) Currents.

Performance Standard. Define the various products used in deriving oceanographic forecasts and state, to an 80% accuracy, how the elements above impact mission specific operations.

MIA-362	8.0		E	N/A L

Goal. Conduct a mission analysis.

Requirement. Given a requirement to provide METOC support, conduct a thorough analysis of the mission. A minimum of 4 analysis shall be performed and include:

(1) Situation.
(2) Mission.
(3) Execution.
(4) Administration and Logistics.
(5) Command and Control.

Performance Standards. Analysis shall be provided to the MAI for evaluation within 2-hours of assignment.

MIA-363	3.0	R	E	N/A L

Goal. Demonstrate proficiency on METOC software applications.

Requirement. Operate each suite to exhibit working proficiency of knowledge:

(1) GFMPL.
(2) TAWS.
(3) AREPS.
(4) METCAST/JMV.
(5) LEADS.

Performance Standard. Successfully produce assigned products utilizing appropriated software.

Prerequisite. MIA-362.

MIA-364	3.0		E	N/A L

Goal. Assess METOC impacts on aviation operations.

Requirement. After conducting a thorough mission analysis, utilize METOC equipment to assess and brief METOC impacts on operations. The assessment shall include, at a minimum, the following essential elements of information (EEIs):

(1) Sea surface temperature.
(2) Sky condition.
(3) Visibility (surface/slant).
(4) Winds (surface and aloft).
(5) Temperature.
(6) Precipitation.
(7) Hazardous weather.
(8) Turbulence.
(9) Icing.

(10) Hail.
(11) Astronomical data.
(12) Humidity (relative and absolute).
(13) Pressure.
(14) Ditch headings.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with applicable references.

Prerequisite. Applicable portion of MCWP 3-35.7, and MIA-362.

MIA-365 3.0 E N/A L

Goal. Assess METOC impacts on ground operations.

Requirement. After conducting a thorough mission analysis, utilize METOC equipment to assess and brief METOC impacts on operations. The assessment shall include, at a minimum, the following EEI:

(1) River stage and currents.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Snow/ice depth and coverage.
(8) Freeze and thaw depth.
(9) Hazardous weather.
(10) Astronomical data.
(11) Sea/shore conditions (tides, currents, surf, and water temperature).
(12) Vertical wind profile.
(13) Wind chill and WBGTI.

Performance Standard. Complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance per applicable references.

Prerequisite. Applicable portion of MCWP 3-35.7 and MIA-362.

MIA-366 3.0 E N/A L

Goal. Assess METOC impacts on intelligence operations.

Requirement. After conducting a thorough mission analysis, utilize METOC equipment to assess and brief METOC impacts on operations. The assessment shall include, at a minimum, the following EEI:

(1) Hazardous weather.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.

(7) Snow depth and coverage.
(8) Astronomical data.
(9) EM propagation.

Performance Standard. Complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with applicable references.

Prerequisite. Applicable portion of MCWP 3-35.7 and MIA-362.

MIA-367 3.0 E N/A L

Goal. Assess METOC impacts on logistical operations.

Requirement. Assess and brief the METOC impacts on operations. The assessment shall included, at a minimum, the following EEI:

(1) Bathymetry.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Snow depth and coverage.
(8) Astronomical data.
(9) EM propagation.
(10) Hazardous weather.
(11) Currents.
(12) Tides.
(13) Water temperature.
(14) Sea state.
(15) Surf conditions.
(16) Ice conditions.
(17) Wind chill and WBGTI.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with applicable references.

Prerequisite. Applicable portion of MCWP 3-35.7 and MIA-362.

MIA-368 3.0 R E N/A L

Goal. Produce mission specific products.

Requirement. Utilizing Tactical Decision Aids, produce:

(1) Historical environmental prediction condition (HEPC) summary.
(2) Refractive index profile.
(3) Radar coverage diagrams.
(4) Radar propagation loss.
(5) Platform vulnerability.
(6) Probability of detection.
(7) Electronic support measures.
(8) Electronic countermeasures.
(9) Solar lunar products.
(10) Weapons performance.

Performance Standard. Complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the reference.

Prerequisite. Applicable portion of MCWP 3-35.7 and MIA-362.

134. CORE PLUS TRAINING

1. METOC Product Briefing (MPB)

a. Purpose. To demonstrate advanced proficiency in techniques and tactics used to verbally present current and future states of the atmosphere.

b. General

(1) The Core Skill Advanced phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be completely proficient in briefing METOC parameters in relation to mission support requirement.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (2 Events, 30.0 Hours).

MPB-400	6.0	E	N/A	L

Goal. Conduct a pre-deployment brief.

Requirement. Prepare and conduct a mission specific deployment brief. Brief shall include, but is not limited to:

(1) Basic forecasted meteorological parameters.
(2) Surface observation and TAF.
(3) Flight weather products.
(4) Types of severe weather warnings and advisories.
(5) Available and/or applicable METOC software.
(6) NATOPS requirements.
(7) METOC support capabilities.
(8) Climatological impact assessment.
(9) Type of terrain in area of interest and influence to METOC parameters.

Performance Standard. Complete briefing with 8 hours of receipt of RFI per MCWP 3-35.7.

MPB-401	24.0	E	N/A	L

Goal. Conduct an amphibious warfare brief.

Requirement. Prepare and present an amphibious warfare brief that contains the listed items:

(1) Current weather information.
(2) 24-hour weather information.
(3) Aviation parameters.
(4) Surf forecast.
(5) Tactical assessment.
(6) Atmospheric refractive summary.
(7) Astronomical data.
(8) 24-hour radiological/chemical fallout forecast.

Performance Standard. Complete the briefing with 24 hours of receipt of RFI per MCWP 3-35.7.

2. Meteorological Radar (MDR)

a. Purpose. To demonstrate proficiency at meteorological radar management.

b. General

(1) The Core Skill Advanced phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be completely proficient in radar operations and management.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (1 Event, 6.0 Hours).

MDR-410	6.0	E	N/A	L

Goal. Manage meteorological radar operations.

Requirement. Complete tasks listed below to gain proficiency in management of Doppler radar techniques:

(1) Establish and coordinate background maps with the radar operation center.
(2) Coordinate Doppler radar maintenance.
(3) Identify and implement software and hardware configurations.
(4) Identify and configure radar user functions.
(5) Establish radar regular and limited access adaptation data.
(6) Participate in unit radar committee meetings.
(7) Establish radar alerts and thresholds.
(8) Establish one-time product request procedures.
(9) Establish radar product set lists.
(10) Establish dedicated and non-associated radar product generator (RPG) lists.
(11) Set radar system clock.

Performance Standard. Completion of requirement must not violate local or RDA system integrity.

3. METOC Planning Coordination (MPC)

a. Purpose. To demonstrate familiarity in coordinating METOC support in support of MAGTF missions.

b. General

(1) The Core Skill Advanced phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be proficient in METOC planning and coordination as it relates to mission support requirements.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (6 Events, 101.0 Hours).

MPC-420	24.0	E	N/A	L

Goal. Introduce joint operation METOC functions.

Requirement. Be familiar with the following tasks:

(1) Coordinate joint METOC support.
(2) Liaison with component METOC units/commands.
(3) Identify and correct joint METOC support deficiencies.
(4) Provide operational planning products in support of the IPB process.

Performance Standard. Ensure Marine METOC interest and planning requirements are addressed.

MPC-421	8.0	E	N/A	L

Goal. Submit input to annexes of operational orders.

Requirement. Submit METOC input to the annexes of operational orders and LOIs to the requesting command. Complete the requirement on each of the following:

(1) Intelligence operations, Annex B.
(2) Environmental operations, Annex H.
(3) Collection plan, Annex J.
(4) Communications and information systems, Annex K.

Performance Standard. Draft METOC input must be in Joint Operational Planning and Execution System (JOPES) or applicable format; be in accordance with orders and directives; and contain all required information to support designated mission and designate all external requirement for successful METOC support.

MPC-422 10.0 E N/A L

Goal. Introduce concepts to METOC support issues.

Requirement. Familiarize and draft the listed reports:

(1) Draft Joint Universal Lessons Learned Summary (JULLS) report.
(2) Draft METOC After Action Reports.
(3) Draft Marine Corps Lessons Learned System (MCLLS) reports.
(4) Draft Universal Needs Statement (UNS) reports.
(5) Draft equipment casualty reports (CASREP).

Performance Standard. Content and format will be in accordance with orders and directives governing the individual report.

MPC-423 3.0 E N/A L

Goal. Manage logistical support program.

Requirement. Manage the listed METOC logistical support programs:

(1) Supply requisitions.
(2) Equipment outages.
(3) Fiscal.

Performance Standard. Comply with applicable orders and directives.

MPC-424 32.0 E N/A L

Goal. Conduct deployment requirements and procedures.

Requirement. Accomplish the following tasks:

(1) Plan a deployment of tactical METOC assets to a Forward Operating Base (FOB).
(2) Coordinate transportation of equipment (classified and unclassified) to designated area.
(3) Coordinate personnel transportation and billeting.
(4) Conduct appropriate inspections.
(5) Coordinate network connectivity (where available).
(6) Coordinate logistical support.

Performance Standard. Conduct the above tasks so personnel and equipment successfully arrive at the designated area and establish METOC support capabilities.

MPC-425 24.0 E N/A L

Goal. Conduct METOC support operations for the MAGTF.

Requirement. Provide METOC support through all phases of MAGTF planning and execution operations. Complete, at a minimum, the following items:

(1) Participate in rapid response planning process (R2P2) training and operation-planning teams (OPT).
(2) Coordinate METOC support requirements for the MEU.
(3) Liaise with MEF METOC units on METOC support issues.
(4) Identify and correct METOC support deficiencies.
(5) Provide operational planning products in support of the Intelligence Preparation of the Battlefield (IPB) process.

Performance Standard. Ensure Marine METOC interests and planning requirements are addressed.

4. METOC Impact Assessment (MIA)

a. Purpose. To demonstrate core plus proficiency on the processes and products that assist in providing assessment of atmospheric conditions to mission specific support requirements.

b. General

(1) The Core Skill Advanced phase is required prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC personnel shall be competent at providing commanders an accurate assessment of METOC impacts to MAGTF, Joint, and Coalition operations.

c. Ground/Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

d. Event Training. (4 Events, 33.0 Hours).

MIA-430	24.0	E	N/A	L

Goal. Produce products to support planning and execution of joint operations and missions.

Requirement. Produce mission specific impact assessments for the listed joint missions. Exhibit a comprehensive knowledge of METOC element impacts on the major weapon and support categories and missions:

(1) Humanitarian aid missions.
(2) Deep strike missions.
(3) Force on force missions.
(4) Over the horizon missions.
(5) Counterinsurgency missions.
(6) Weaponry.
    (a) Weapons of mass destruction.
    (b) Laser guided munitions.
    (c) Infrared guided munitions.
    (d) Visual guided munitions.
    (e) GPS guided munitions.
(7) Communications.
    (a) Satellite.
    (b) UHF/VHF.
(8) Trafficability.

(9) MEU(SOC).

Performance Standard. Complete the briefing with 3 hours of receipt of RFI. Completion will not be awarded until content and format per applicable references and guidance.

Prerequisite. Applicable portion of MCWP 3-35.7.

MIA-431 3.0 E N/A L

Goal. Assess METOC impacts on Chemical, Biological, Radiological and nuclear (CBRN) defensive operations.

Requirement. Assess and brief METOC impacts on operations. The assessment will consider, at a minimum, the following EEI:

(1) Hazardous weather.
(2) Sky condition.
(3) Humidity.
(4) Wind.
(5) Temperature.
(6) Atmospheric stability.
(7) Precipitation.
(8) EM propagation.

Performance Standard. Complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are achieved per applicable references.

Prerequisite. Applicable portion of MCWP 3-35.7.

MIA-432 3.0 E N/A L

Goal. Assess METOC impacts on communication operations.

Requirement. Assess and brief the METOC impacts on operations. The assessment will consider, at a minimum, the following EEI:

(1) Space weather.
(2) Wind.
(3) Temperature profile.
(4) Precipitation.
(5) Snow depth and coverage.
(6) EM propagation.
(7) Hazardous weather.

Performance Standard. Complete the briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are in accordance with the reference.

Prerequisite. Applicable portion of MCWP 3-35.7.

MIA-433 3.0 E N/A L

Goal. Assess METOC impacts to amphibious operations.

Requirement. After conducting a thorough mission analysis, utilize METOC equipment to assess and brief the METOC impacts on operations. The assessment will consider, at a minimum, the following EEI:

(1) Bioluminescence.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Illumination.
(8) Currents.
(9) Tides.
(10) Water temperature.
(11) Sea state.
(12) Surf conditions.
(13) Hazardous weather.
(14) Ice conditions.
(15) Bathymetry.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are achieved per the reference.

Prerequisite. Applicable portion of MCWP 3-35.7.

140. INSTRUCTOR QUALIFICATION TRAINING

1. Formal Schools Instructor (FSI)

a. Purpose. To prepare personnel to become instructors at METOC formal schools.

b. General

(1) Administrative Notes. Training shall be conducted at Keesler, Air Force Base, Mississippi. Course number for the Basic Instructor Course (BIC) is E3AIR3S200.

(2) Prerequisite

(a) JMA Designation with 3 years of operational METOC forecasting.
(b) Secret clearance through FY 07 and Top Secret thereafter.
(c) Rank of Sergeant through Master Gunnery Sergeant.
(d) Assignment to POI.

(3) Refresher Training. Refresher events shall be completed annually or when assigned by the course supervisor.

(4) Stage End Performance. Upon completion of this stage, personnel shall have knowledge of techniques of military instruction and be eligible for qualification as a Formal Schools Instructor.

c. Crew Requirements. Designated as a JMA and qualified as Formal Schools Instructor (FSI).

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are required.

e. Event Training. (6 Events, 391.0 Hours).

FSI-500	150.0		E	N/A L

Goal. Attend BIC.

Requirement. Complete BIC or refresher BIC.

Performance Standards. Complete all written measurements with at least a 70% proficiency and pass all progress checks with 75% proficiency.

Prerequisite. JMA Designation with 3 years in operational METOC forecasting. Rank of Sergeant through Master Gunnery Sergeant.

FSI-501	150.0		E	N/A L

Goal. Complete instructor certification process.

Requirement. Complete the following:

(1) Observe course curriculum.
(2) Pass required tests and progress checks.
(3) Instruct under supervision.
(4) Successful qualification/certification.

Performance Standards. Achieve 100 % proficiency on all measurements and progress checks.

Prerequisite. FSI-500.

FSI-502	6.0	R	E	N/A L

Goal. Complete annual requalification.

Requirement. Successfully complete annual requalification testing and receive satisfactory instructor evaluations.

Performance Standards. Achieve 100% proficiency on written test and progress checks for each block of instruction.

Prerequisite. FSI-501.

FSI-503	75.0		E	N/A L

Goal. Complete supplemental instructor training.

Requirement. Successfully complete supplemental instructor training.

(1) Objectives and test course.
(2) Instructional system development process.
(3) Instructor Supervisor Course, as required.

Performance Standards. Achieve 100% proficiency on written test and progress checks for each block of instruction.

Prerequisite. FSI-500, FSI-501.

FSI-504	75.0	E	N/A	L

Goal. Complete curriculum development program.

Requirement. Complete the Technical Writer Principles Course.

Performance Standards. Complete required course with a minimum passing score of 70%.

Prerequisite. FSI-500, FSI-501, FSI-502, FSI-503.

FSI-505	75.0	E	N/A	L

Goal. Achieve Master Instructor Rating.

Requirement. Complete Master Instructor Program.

(1) Two year assignment to the prescribed course of instruction.
(2) Technical Writer Principles Course.
(3) Complete curriculum project.
(4) Formal graded presentation.

Performance Standards. Complete all requirements with a minimum passing score of 70%.

Prerequisite. FSI-500, FSI-501, FSI-502, FSI-503.

2. METOC Analyst Instructor (MAI)

a. Purpose. To train METOC personnel to become instructors and mentors at local METOC commands.

b. General

(1) Administrative Notes. Training shall be conducted at local METOC units.

(2) Prerequisites

(a) Journeyman designation.
(b) Top Secret clearance.
(c) Rank of Sergeant through Master Gunnery Sergeant.
(d) Assignment to POI.

(3) Refresher Training. Refresher events shall be completed annually or when assigned.

(4) Stage End Performance. Upon completion of this stage, personnel shall have knowledge of techniques of military instruction and eligible for qualification as a MAI. Completion of MAI-664 event denotes designation.

c. Crew Requirements. Designated Journeyman METOC Analyst (JMA), qualified METOC Analyst Instructor (MAI), Master METOC Analyst (MMA) and/or METOC Officer (MO).

d. Academic Training. Local mission and operating procedures will dictate academic training required to support events. Local METOC commanders shall review academic periods of instruction for applicability and content and utilize ASPs when appropriate.

e. Event Training. (2 Events, 113 Hours).

MAI-510	108.0	E	N/A	L

Goal. METOC subjects certification.

Requirement. METOC Analyst instructor under training (IUT) shall be required to complete the Core Skill Basic and Core Skill Advanced phases of training. The instructor under training shall prepare and present periods of instruction for all 200 and 300 level events.

Performance Standard. The Master METOC Analyst (MMA) or METOC Officer (MO) shall evaluate the IUT on class presentation and knowledge of subject; and provide recommendation to the designating authority for MAI designation.

Prerequisite. Rank of Sergeant or above; complete NCO resident or non-resident course.

MAI-511	5.0	E	N/A	L

Goal. Conduct techniques of military instruction (TMI) for instructor/mentorship designation.

Requirement. Comprehend TMIs by conducting five periods of instructions chosen by the MMA and evaluated by the NCOIC and/or METOC Officer.

Performance Standard. Exhibit knowledge of the selected subjects, counseling, and TMI.

Prerequisite. MAI-510.

150. REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS

1. Required Events

a. Purpose. To provide METOC requirements for progression within the occupational specialty. Documentation of training events shall be completed and reported in training management software and local training jackets.

b. General. Academic events do not count towards combat readiness percentage (core skill proficiency); however, every attempt shall be made to complete all required events at appropriate levels of training. The following provides a description of event codes.

(1) SEC - Security Tracking Code.
(2) ACA - Academic Tracking Code.

c. Academic Training. Correspondence courses aid to further enhance individual knowledge base.

d. Event Training. (9 events).

SEC-600 E L

Goal. Track secret clearances.

Requirement. Ensure secret clearances are obtained and maintained.

Performance Standard. Complete and submit periodic reviews as required by applicable references.

SEC-601 E L

Goal. Track top secret clearances.

Requirement. Ensure top secret clearances are obtained and maintained.

Performance Standard. Complete and submit periodic reviews as required per applicable references.

Prerequisite. SEC-600.

ACA-602 E L

Goal. Complete AG Module 1.

Requirement. Complete AG Module 1 using a web-based application.

Performance Standard. Achieve a minimum passing score of 80%.

ACA-603 E L

Goal. Complete AG Module 2.

Requirement. Complete AG Module 2 using a web-based application.

Performance Standards. Achieve a minimum passing score of 80%.

ACA-604 E L

Goal. Complete Principles of Oceanography Course.

Requirement. Perform the following:

(1) Complete the course utilizing the materials provided.
(2) Submit the answer sheet to be locally graded.

Performance Standards. Achieve a minimum passing score of 80%.

ACA-605 E L

Goal. Complete AG module 3.

Requirement. Complete AG Module 3 using a web-based application.

Performance Standards. Achieve a minimum passing score of 80%.

ACA-606 E L

Goal. Complete AG module 4.

Requirement. Complete AG Module 4 using a web-based application.

Performance Standards. Achieve a minimum passing score of 80%.

ACA-607 E L

Goal. Complete AG module 5.

Requirement. Complete AG Module 5 using a web-based application (DL 68005).

Performance Standards. Achieve a minimum passing score of 80%.

ACA-608 E L

Goal. Complete Introduction to Forecasting (ITF) Course.

Requirement. Perform the following:

(1) Complete course utilizing the material provided.
(2) Pass locally administered math test.
(3) Pass locally administered meteorological test.

Performance Standards. Achieve a passing score of 80% on both tests.

2. METOC Doctrine (MDN)

a. Purpose. To demonstrate familiarity with the Marine Corps METOC support architecture, missions and local operating procedures.

b. General. All personnel shall be assigned this stage of training upon completion of the Core Skill Introduction phase and prior to assignment to any other stage.

c. Ground/Academic Training. Academic training syllabus shall be developed and approved by the MWSG METOC officer prior to implementation. Checklists contained within this Manual are provided to ensure comprehensive and cohesive training within the METOC community. Local mission and operating procedures will dictate the academic training in support of the events. Local METOC commanders shall annually review academic periods of instruction for applicability and content.

d. Event Training. (8 Events, 15.0 Hours).

MDN-620 6.0 E N/A L

Goal. Equipment Casualty Reporting familiarization.

Requirement. Per NAVMETOCCOMINST 13950.1, draft each message listed below a minimum of 3 times:

(1) Casualty report.

(2) Casualty update.
(3) Casualty correct.
(4) CSR.

Performance Standard. Draft message must meet requirements for content and format requirements per applicable references.

MDN-621 1.0 E N/A L

Goal. MAGTF operations familiarization.

Requirement. Identify the roles and missions of each element of the MAGTF:

(1) Air Combat Element (ACE).
(2) Ground Combat Element (GCE).
(3) Command Element (CE).
(4) Combat Service Support Element (CSSE).
(5) Supporting Establishment(SE).

Performance Standard. Stated roles and missions shall be verified by applicable references to an 80% accuracy.

MDN-622 2.0 E N/A L

Goal. METOC support architecture comprehension.

Requirement. Receive training on the components, billets, equipment and capabilities that comprise the Marine Corps METOC support architecture. State and discuss the missions, composition, equipment and capabilities of the following METOC support unit/billets:

(1) MCAS/MCAF METOC support.
(2) Marine Wing Support Group (MWSG).
(3) Marine Expeditionary Force (MEF).
(4) METOC Support Team (MST).
(5) Marine Wing Support Squadron (MWSS) Weather Service Section.
(6) Staff Weather Officer (SWO).
(7) Joint Weather Officer (JWO).
(8) Joint METOC Forecast Center (JMFU).
(9) ACE Weather Officer (ACE WXO).
(10) Mobile Meteorological Facility Replacement (MetMF(R)).
(11) NITES IV.

Performance Standard. Verbally or in writing, identify the components, billets, units supported, and equipment inherent to each support element and capabilities of the billets/components listed above without error.

MDN-623 2.0 E N/A L

Goal. Comprehend local area policies and procedures.

Requirement. Define and discuss the listed local area knowledge:

(1) Airfield description.
(2) SOP procedures.
(3) Command support structure.
(4) Destructive weather procedures.
(5) Security requirements.
(6) Watch composition and schedule.
(7) Watch procedures.
(8) Local forms.
(9) Reference and technical library procedures.
(10) Local area forecaster handbook.
(11) Weather regimes.
(12) Local security procedures.
(13) Airfield description.
(14) Watch routine.
(15) METOC equipment.
(16) Command structure.
(17) Warning criteria/procedures.
(18) Quality Assurance Programs.
(19) Communication configurations and procedures.
(20) Administrative Reports.

Performance Standard. Without the aid of references, respond to questions, either verbally or in writing, to an 80 % proficiency.

MDN-624 1.0 E N/A L

Goal. Demonstrate comprehension of regulations, orders and instructions governing classified materials and software.

Requirement. Identify regulations, orders and instructions governing security and state the general content of each.

Performance Standard. Demonstrate knowledge, verbally or in writing, of all applicable orders.

MDN-625 1.0 E N/A L/S

Goal. Conduct tower visibility observer training.

Requirement. Prepare and disseminate tower visibility training to Air Traffic Controllers (ATC), if available, for tower visibility certification.

Performance Standard. Ensure ATC personnel comprehend subject material by their achieving 80% on tower visibility certification exams.

MDN-626 1.0 E N/A L

Goal. METOC mission comprehension.

Requirement. Review MCWP 3-35.7 and SOP with MAI. State the mission and composition of each echelon of MAGTF METOC support.

(1) Marine Corps METOC community.
(2) Local METOC mission.
(3) Apprentice METOC Analyst mission.

(4) Airfield Operations.
(5) Marine Corps Aviation.
(6) Deployable METOC units.
    (a) MWSS.
    (b) MST.

Performance Standard. Define the mission of the above listed elements without error.

Prerequisite. Academic training. Read and comprehend MCWP 3-35.7 and SOP.

MDN-627 1.0 E N/A L

Goal. Comprehend orders and directives governing METOC support.

Requirement. Review listed items with MAI. Demonstrate comprehension of the following orders and directives:

(1) Desktop procedures.
(2) NAVMETOCCOMINST 3141.2 Surface METAR Observation User's Manual.
(3) OPNAVINST 3140.24(_) Warning and Conditions of Readiness.
(4) NAVMETOCCOMINST 3142.1(_) Pilot Reports.
(5) OPNAVINST 3710.7(_) NATOPS Manual.
(6) Local Destructive Weather Order.
(7) MCWP 3-35.7 MAGTF METOC Support.

Performance Standard. Complete a verbal/written test on the orders and directives with 80% accuracy.

Prerequisite. Academic training. Read and comprehend listed orders and directives.

3. Garrison METOC Equipment (GME)

a. Purpose. To introduce academic or practical application of garrison METOC equipment.

b. General. These events are not related to combat ready or core skill proficiency readiness, but are available to assist in core skill training.

c. Ground/Academic Training. Local mission and operating procedures will dictate the academic training in support of the events. Local METOC commanders shall review academic periods of instruction for applicability and content.

d. Event Training. (5 Events, 31.0 Hours).

GME-630 24.0 Z E N/A L

Goal. Operate garrison METOC equipment to provide METOC support to base operations.

Requirement. Configure, operate and conduct operator level troubleshooting of the following METOC systems:

(1) Appropriate automated data processing (ADP) equipment.
(2) Lightning Position and tracking system (LPATS).
(3) Pilot to Forecaster Radio (METRO).
(4) Doppler radar system (WSR-88D).
(5) Wet Bulb Temperature Index Sensors. (WBGTI).
(6) Tower to metro displays/communications (WXVISION).
(7) Hand Held equipment (PMQ-3, psychrometers).
(8) Automated Surface Observing System (ASOS).

Performance Standard. Complete each requirement per applicable references and do not degrade system integrity, stability or operation.

GME-631 1.0 E N/A L

Goal. Configure the Lightning Position And Tracking System (LPATS).

Requirement. Given a LPATS, conduct the following operations:

(1) Configure the system.
(2) Configure background maps.
(3) Configure range alarms.
(4) Configure loops.

Performance Standard. Conduct requirements so as to allow for maximum time for warning of lightning strikes without violating system and communications stability.

GME-632 3.0 E N L

Goal. Operate garrison handheld meteorological devices.

Requirement. Operate all handheld sensing devices indigenous to the unit. Conduct sensing of environmental elements utilizing devices like those listed below. Devices may vary from site to site, units commanders shall identify devices to be evaluated.

(1) Wind sensing devices.
(2) Pressure sensing devices.
(3) Temperature sensing devices.

Performance Standard. Conduct sensing of environmental elements utilizing the handheld device(s) without error.

GME-633 2.0 E GE L

Goal. Operate the Automated Surface Observing System (ASOS).

Requirement. Operate the ASOS to retrieve, archive, and adjust weather elements to ensure most accurate weather information is provided. Perform the following:

(1) Power on system.
(2) Log on as user.
(3) Manipulate software to display desired product.

(4) Manipulate software to alter automated products when required.
(5) Ensure archiving of data is achieved.

Performance Standard. Without aid of reference complete the requirement to 80% accuracy.

GME-634 1.0 E G,M L

Goal. Operate the lightning detection equipment operations (LPATS).

Requirement. Given a lightning detection system, conduct power up and down procedures, reset range alarms, determine azimuth and distance of lightning from the area of interest, and manipulation of display. Perform the following:

(1) Power on system.
(2) Log on to the system.
(3) Establish communications.
(4) Turn on/off directed alarm ranges.
(5) Set range alarms.
(6) Manipulate display to support mission.
(7) Archive data.

Performance Standard. Conduct requirements so as to allow for maximum time for warning of lightning strikes without violating system and communications stability.

4. Tactical METOC Equipment (TME)

a. Purpose. To introduce academic or practical application of tactical METOC equipment.

b. General. These events are not related to combat ready or core skill proficiency readiness, but is available to assist in core skill training.

c. Ground/Academic Training. Local mission and operating procedures will dictate the academic training in support of the events. Local METOC commanders shall review academic periods of instruction for applicability and content.

d. Event Training. (6 Events, 124.0 Hours).

TME-640 4.0 E C L/S

Goal. Conduct logistic support functions.

Requirement. Conduct listed logistical support functions:

(1) Inventory consumables and identify deficiencies to the METOC chief.
(2) Initiate request for supplies and equipment.
(3) Execute hazardous materials program procedures.
(4) Execute deployment of METOC equipment when directed.

Performance Standard. The MAI will evaluate performance of the requirement for successful completion per applicable references.

TME-641 48.0 E N/A L

Goal. Perform system management functions of applicable subsystems inherent to the MetMF(R).

Requirement. Complete tasks listed below to configure and manage the components of the METMF(R). Ensure continuous data ingest and dissemination of the following subsystems:

(1) Processing Subsystem (PCS).
    (a) Establish and maintain integrity of operating systems.
    (b) Establish and configure components of the network.
    (c) Install authorized software upgrades and patches.
    (d) Optimize effective flow of meteorological data throughout the communication paths.
    (e) Establish network naming conventions and paths of received data.
    (f) Maintain the meteorological system interface with network and web dissemination and storage.
    (g) Obtain proper keying material for use in CCI equipment.
(2) Meteorological Radar Subsystem (MRS).
    (a) Establish and maintain system setup and configuration parameters.
    (b) Archive/restore configuration data to tape (Level 0 dump tape).
    (c) Install system software when required.
    (d) Establish standard processes for desired products.
    (e) Establish standard product set for each established process.
    (f) Configure network interfaces within the operating system and application software.
    (g) Establish and manage scheduled processes.
    (h) Create underlay/overlays for the desired AO.
    (i) Ensure configuration and operation are within frequencies allocated and in accordance with safety requirements.
(3) Meteorological Satellite Subsystem (MSS).
    (a) Establish and maintain system setup and configuration parameters.
    (b) Archive/restore configuration data to tape (Level 0 dump tape).
    (c) Install system software when required.
    (d) Configure network interface within the operating system.
    (e) Maintain and follow file naming conventions.
    (f) Configure automatic export of satellite imagery to meet mission requirements.
(4) Communications Subsystem (CSS).
    (a) Obtain appropriate keying material for system.
    (b) Ensure appropriate frequencies have been allocated for use.
    (c) Ensure configuration and operation are within frequencies allocated and in accordance with safety requirements.
(5) Local/Remote Sensor Subsystem (LSS/RSS).
    (a) Configure software and hardware interfaces for data reception.
    (b) Configure software for data export and archive.
(6) Rawinsonde subsystem (RWS).

(a) Configure UMQ-12 for different locations and output types.

Performance Standard. Meet requirement without violating component, system or network integrity.

TME-642 16.0 E N/A L

Goal. Deploy the MetMF(R).

Requirement. Given a simulated mission requirement, embark the MetMF(R) to the designated area. Perform the following:

(1) Supervise embarkation of MetMF(R).
(2) Supervise lift.
(1) Conduct pre-deployment operational checks.
(2) Inventory supplies.
(3) Pack out gear.
(4) Inspect personnel gear.
(5) Transport classified materials.
(6) Coordinate lift and transport equipment.
(7) Unpack gear and equipment.
(8) Setup sensing equipment.
(9) Perform post movement operational checks.
(10) Packup METMF(R).
(11) Conduct hot wash of accomplishments and deficiencies.
(12) Generate and submit an after action report and submit to METOC Chief.

Performance Standard. Deployment procedures shall be evaluated by a Master METOC Analyst and must be conducted in compliance with applicable references. The refresh rate is semi-annually.

External Syllabus Support. Heavy Equipment.

TME-643 8.0 E N/A L

Goal. Setup and conduct operational checks of each subsystem inherent to the METMF(R).

Requirement. At designated area and per the reference, perform the following:

(1) Shelter Subsystem (SSS) – Place and level the shelter and ECUs. Ensure availability of safety equipment.
(2) Processing Subsystems (PCS).
    (a) Power up component and log on to the applicable system software of the PCS.
    (b) Test network connectivity for each component.
(3) Meteorological Radar Subsystem (MRS).
    (a) Conduct power up procedures for MRS.
    (b) Log on to the system.
    (c) Ensure desired processes are scheduled.
(4) Meteorological Satellite Subsystem (MSS).
    (a) Place and connect satellite antennas.
    (b) Energize components.
    (c) Log on to system.

(d) Generate satellite prediction schedule.
(e) Ensure data capture is achieved, to include proper keying of crypto gear (as applicable).

(5) Communications Subsystem (CSS).
(a) Place and connect antennas.
(b) Energize components.
(c) Key required Crypto gear as applicable.
(d) Conduct communications checks.

(6) Portable Meteorological Subsystem (PMS).
(a) Connect system components.
(b) Energize components.
(c) Log on to system.
(d) Establish required network or workgroup.
(e) Ensure receipt of products.

(7) Local Sensor Subsystem (LSS).
(a) Place and connect Local Sensor.
(b) Place and connect the ceilometer.
(c) Energize component of the LSS.
(d) Log on to system.
(e) Open applicable software.
(f) Ensure receipt of data.

(8) Remote Sensor Subsystem (RSS).
(a) Place and connect Remote Sensor(s).
(b) Place and connect Remote Sensor antenna array.
(c) Energize component of the RSS.
(d) Log on to system.
(e) Open applicable software.
(f) Ensure receipt of data.

(9) Rawinsonde subsystem (RWS).
(a) Place and connect Antenna array.
(b) Interface RWS with PCS.
(c) Energize system.
(d) Enter coefficients and local data.
(e) Launch sounding.
(f) Ensure receipt of data.

Performance Standard. Actions shall not violate system or software integrity and must be in compliance with applicable references.

External Syllabus Support. Heavy equipment.

TME-644 24.0 E N/A L

Goal. Operate the METMF(R).

Requirement. In a simulated or actual deployed environment, perform the following actions:

(1) Provide secured and unsecured pilot to METRO communications.
(2) Provide tower to METRO communications.
(3) Respond to requests for information (RFIs).
(4) Conduct METOC impact assessments to operations in Area of interest.
(5) Conduct data transmission and reception operations.

(6) Conduct data transfer to and from the common operating picture to determine and provide relevant tactical METOC pictures.
(7) Conduct secured and unsecured voice communications.
(8) Acquire and analyze all satellite imagery for the production of forecasts and assessment of impacts to MAGTF operations.
(9) Acquire and analyze all radar imagery for the production of forecasts/warnings, advisories and assessment of impacts to MAGTF operations.
(10) Acquire and analyze synoptic, mesoscale and microscale METOC model output for the production of forecasts and assessment of impacts to MAGTF operations.
(11) Acquire, analyze, encode and disseminate local and remotely sensed surface observations for the production of forecasts and assessment of impacts to MAGTF operations.
(12) Conduct upper atmospheric observations for the production of forecasts and assessment of impacts to MAGTF operations.
(13) Acquire and analyze all lightning data for the production of forecasts/warnings, advisories and assessment of impacts to MAGTF operations.
(14) Develop impact assessment briefing, for applicable MAGTF components, for large-scale dissemination via oral, electronic, or remote means.

Performance Standard. Perform all tasks without supervision. The MMA shall evaluate performance of the event for completion per applicable references.

TME-645	24.0	E	N/A	L

Goal. Operate the NITES IV.

Requirement. In a simulated or actual deployed environment, perform the following actions:

(1) Deploy and setup of NITES IV.
(2) Utilize directed means to provide METOC impact assessment to supported element.
(3) Conduct satellite communications operations (if available) for data receipt and communications.
(4) Conduct data receipt operations.
(5) Conduct data transfer to and from the common operating picture via predetermined software to determine and provide relevant tactical METOC impact assessments.
(6) Conduct graphical data retrieval and analyzation in support of impact assessment.
(7) Conduct analyzation of locally sensed data for METOC impact assessment.
(8) Develop impact assessment briefing for applicable MAGTF component for large-scale dissemination via oral, electronic and remote video means.

Performance Standard. Perform all tasks with no supervision. The MMA shall evaluate performance of the event for completion per applicable references.

5. Qualifications

a. Purpose. To provide training tracking codes for enlisted METOC qualifications.

b. General

(1) This portion of the training syllabus is comprised of requirements for progression within MOS 6821 and MOS 6842. Documentation of training events shall be completed and reported in current T&R tracking software as well as local training jackets.

(2) The composition of a qualification board shall be determined by the qualifying authority, but as a minimum, shall consist of a designated MAI, MMA and/or a qualified MO as delineated in chapter two of this Manual.

(3) Upon reassignment to another permanent duty station, event MDN-623 shall be completed by all METOC personnel prior to any unsupervised attendance.

(4) Commanding officers shall award the secondary MOS 6852 upon attaining the MIA qualification (event MIA-657).

c. Combat Readiness Percentage. The events in this stage are not associated with combat readiness percentages. Qualification events are utilized to track unit core skill proficiency.

d. Event Training. (9 events).

MSO-650	E	N/A	L

Goal. Qualify as a surface meteorological observer.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. MSO-200 through MSO-203, MDN-623, GME-632, GME-633.

UAS-651	E	N/A	L

Goal. Qualify as capable of sensing upper-atmospheric elements.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. UAS-210 through UAS-215, MDN-623.

OHS-652 E N/A L

Goal. Qualify in Oceanography-Hydrological Services.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. OHS-220, OHS-221, MDN-623.

FSQ-653 E N/A L

Goal. Qualify in Forecast Support.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. Possess 6821 MOS, complete events AMS-228, AMS-230, MDA-265, MDA-266, MSO-650, UAS-651.

MFS-654 E N/A L

Goal. Qualify in providing forecast support to the MAGTF.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. Complete the Core Skill Basic phase of training (200-level events).

MDR-655 E N/A L

Goal. Qualify in operation and product interpretation of meteorological radar(s).

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. MDR-240, MDR-241, MDR-242, MDR-310, MDR-311.

OFS-656 E N/A L

Goal. Qualify in oceanography-hydrological forecast support.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. OHS-220, OHS-221, OHS-300 through OHS-303.

MIA-657 E N/A L

Goal. Qualify in the assessment of METOC elements and conditions that relate to mission specific support requirements.

*Note: This qualification awards 6852 skill designated MOS. See para 150.5.b.4.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. MFS-654, MIA-363 through MIA-368, MPB-341 through MPB-344, MFS-347.

FSI-658 E N/A L

Goal. Qualify as a formal schools instructor.

Requirement. Complete the prerequisites and a local qualification exam or board.

Performance Standards. Must be in compliance with applicable orders and directives, and local and higher echelon personnel programs.

Prerequisite. JMA-662.

6. Designations

a. Purpose. To provide training tracking codes for enlisted METOC designations.

b. General

(1) This portion of the training syllabus is comprised of requirements for progression within MOS 6821 and MOS 6842. Documentation of training events shall be completed and reported in current T&R tracking software as well as local training jackets.

(2) The composition of a qualification board shall be determined by the designating authority, but as a minimum, shall consist of a designated MAI, MMA and/or a qualified MO as delineated in chapter two of this Manual.

c. Combat Readiness Percentage. The events in this stage are not associated with combat readiness percentages. Designation events are utilized to track unit core skill proficiency.

d. Event Training. (5 events).

AMA-660		E	L/S

Goal. Attain Apprentice METOC Analyst (AMA) designation.

Requirement. The board shall assess the individual's knowledge of Core Skill Basic events through practical applications and verbal or written response to questions. Upon completion of event, individual shall be granted signature authority as an Apprentice METOC Analyst.

Performance Standards. Comprehend materials contained in events and respond to verbal or written questions in a clear and concise manner to be recommended for designation as an AMA.

Prerequisite. MFS-654.

JMA-661		E	N/A	L

Goal. Complete designation checklist for a Journeyman METOC Analyst (JMA).

Requirement. Utilize Appendix F, local certification requirements, and question and answer periods to demonstrate knowledge of required core skills. Upon completion of the Appendix F, complete an oral or written certification board to discern proficiency required for JMA designation.

Performance Standard. Comprehend materials contained in events and respond to verbal or written questions in a clear and concise manner to be recommended for designation as an JMA.

Prerequisite. MFS-654, completion of the Core Skill Advanced phase of training.

JMA-662	6.0	E	N/A	L

Goal. Attain Journeyman METOC Analyst (JMA) designation.

Requirement. The board shall assess the individual's knowledge of Core Skill Advanced events through practical applications and verbal or written response to questions. Upon completion of event, individual shall be granted signature authority as an Journeyman METOC Analyst.

Performance Standard. SNM will be required to respond in a professional and technically correct manner to questions posed in a formal certification board.

Prerequisite. MFS-654, JMA-661, and completion of the Core Skill Advanced phase of training.

MMA-663 E N/A L

Goal. Attain Master METOC Analyst designation (MMA).

Requirement. Complete events and demonstrate proficiency in the following:

(1) Apprentice and Journeyman duties.
(2) Joint and MEF support events.
(3) METOC management and supervision events.

Performance Standard. Complete all pre-requisites and be recommended by a MMA and/or MO.

Prerequisite. AMA-660, JMA-662, MAI-664, Rank of GySgt or above, and a minimum of 8 years time in service.

MAI-664 E N/A L

Goal. Attain the METOC Analyst Instructor (MAI) designation.

Requirement. Complete the prerequisite. Demonstrate knowledge and ability to instruct METOC personnel of lesser skill ability.

Performance Standards. Must be in compliance with applicable references, orders and directives.

Prerequisite. JMA-662.

170. EVENT CRP/HOURS/REFRESH AND CHAINING TABLES. Tables 1-16 through 1-21 provide a quick reference of the events (stage and code), hours, refresh intervals, combat readiness percentage, and chaining for each stage of training.

Table 1-15.-- Core Skill Introduction Events.

STAGE	CODE	HRS	INTERVAL	CRP
FAM	100	1.0	N/A	5.0
FAM	101	10.0	N/A	5.0
FAM	102	40.5	N/A	5.0
FAM	103	45.0	N/A	5.0
FAM	104	68.0	N/A	5.0
FAM	105	12.0	N/A	5.0
FAM	106	12.0	N/A	5.0
FAM	107	40.5	N/A	5.0
FAM	108	40.5	N/A	5.0
FAM	109	12.0	N/A	5.0
FAM	110	12.0	N/A	5.0
FAM	111	12.0	N/A	5.0
	TOTALS:	305.5		60.0

Table 1-16.—Core Skill Basic Events.

STAGE	CODE	HRS	INTERVAL	CRP
MSO	200	2.0	N/A	0.5
MSO	201	0.5	N/A	0.5
MSO	202	2.0	N/A	0.5
MSO	203	30.0	180	0.5
UAS	210	0.5	N/A	0.05
UAS	211	1.0	N/A	0.05
UAS	212	0.5	180	0.1
UAS	213	2.0	180	0.1
UAS	214	1.0	180	0.1
UAS	215	1.0	N/A	0.1
OHS	220	2.0	N/A	0.25
OHS	221	2.0	N/A	0.25
AMS	225	15.0	N/A	0.20
AMS	226	15.0	N/A	0.20
AMS	227	5.0	180	0.25
AMS	228	2.0	N/A	0.35
AMS	229	2.0	N/A	0.5
AMS	230	20.0	N/A	0.5
AMS	231	2.0	180	0.5
AMS	232	1.0	180	0.5
AMS	233	0.5	N/A	0.5
AMS	234	2.0	N/A	0.5
AMS	235	1.0	N/A	0.5
MDR	240	2.0	N/A	0.25
MDR	241	5.0	180	0.25
MDR	242	10.0	180	0.25
MSAT	245	2.0	N/A	0.25
MSAT	246	5.0	N/A	0.25
MSAT	247	1.0	180	0.25
MCS	250	1.0	N/A	0.25
MCS	251	5.0	N/A	0.25
WWA	255	2.0	N/A	0.1
WWA	256	2.0	180	0.1
WWA	257	2.0	N/A	0.1
WWA	258	0.5	N/A	0.1
WWA	259	0.25	N/A	0.1
MDA	260	0.5	N/A	0.25
MDA	261	0.5	N/A	0.25
MDA	262	6.0	N/A	0.25

Table 1-17.—Core Skill Basic Events – Continued.

STAGE	CODE	HRS	INTERVAL	CRP
MDA	263	1.0	180	0.25
MDA	264	10.0	180	0.25
MDA	265	2.0	N/A	0.25
MDA	266	2.0	180	0.25
MDA	267	1.0	180	0.25
MPB	270	3.0	N/A	0.5
MPB	271	2.0	180	0.5
MFS	275	0.5	N/A	0.5
MFS	276	26.0	180	0.5
MFS	277	2.0	N/A	0.5
MFS	278	4.0	N/A	0.5
	TOTALS:	216.25		15.0

Table 1-18.-– Core Skill Advanced Events.

STAGE	CODE	HRS	INTERVAL	CRP
OHS	300	0.5	180	0.5
OHS	301	5.0	N/A	0.5
OHS	302	1.0	N/A	0.5
OHS	303	0.5	180	0.5
MDR	310	2.0	N/A	1.5
MDR	311	6.0	N/A	1.5
MSAT	320	2.0	N/A	1.0
MCS	330	12.0	180	1.0
MPB	340	2.5	N/A	0.7
MPB	341	3.0	180	0.7
MPB	342	2.0	N/A	0.7
MPB	343	150.0	N/A	0.7
MPB	344	1.0	N/A	0.7
MFS	345	3.5	180	1.0
MFS	346	2.0	180	1.0
MFS	347	4.0	N/A	1.0
MPC	350	16.0	180	0.5
MPC	351	2.0	N/A	0.5
MPC	352	6.0	N/A	0.5
MPC	353	16.0	180	0.5
MIA	360	1.0	N/A	0.5
MIA	361	2.0	N/A	0.5
MIA	362	8.0	N/A	0.5
MIA	363	3.0	180	0.5
MIA	364	3.0	N/A	0.5
MIA	365	3.0	N/A	0.5

Table 1-19.-– Core Skill Advanced Events – Continued.

STAGE	CODE	HRS	INTERVAL	CRP
MIA	366	3.0	N/A	0.5
MIA	367	3.0	N/A	0.5
MIA	368	3.0	180	0.5
	TOTALS:	131.0		20.0

Table 1-20.-- Core Plus Events.

STAGE	CODE	HRS	INTERVAL	CRP
MPB	400	6.0	N/A	0.5
MPB	401	24.0	N/A	0.5
MDR	410	6.0	N/A	1.0
MPC	420	24.0	N/A	0.25
MPC	421	8.0	N/A	0.25
MPC	422	10.0	N/A	0.25
MPC	423	3.0	N/A	0.25
MPC	424	32.0	N/A	0.25
MPC	425	24.0	N/A	0.25
MIA	430	3.0	N/A	0.5
MIA	431	24.0	N/A	0.25
MIA	432	3.0	N/A	0.25
MIA	433	3.0	N/A	0.5
	TOTALS:	170.0		5.0

Table 1-21.-– Instructor Qualification Events.

STAGE	CODE	HRS	INTERVAL	CRP
FSI	500	150	N/A	0
FSI	501	150	N/A	0
FSI	502	6	180	0
FSI	503	75	N/A	0
FSI	504	75	N/A	0
FSI	504	75	N/A	0
MAI	510	108	N/A	0
MAI	511	5	180	0
	TOTALS:	644.0		0

Table 1-22.-- Requirements, Qualifications and Designations Events.

STAGE	CODE	HRS	INTERVAL	CRP	NOTES
SEC	600	*	N/A	0	Completion certificates required.
SEC	601	*	N/A	0	Completion certificates required.
ACA	602	80	N/A	0	Completion certificates required.

Table 1-23.-- Requirements, Qualifications and Designations Events Continued.

STAGE	CODE	HRS	INTERVAL	CRP	NOTES
ACA	603	80	N/A	0	Completion certificates required.
ACA	604	80	N/A	0	Completion certificates required.
ACA	605	80	N/A	0	Completion certificates required.
ACA	606	80	N/A	0	Completion certificates required.
ACA	607	160	N/A	0	Certification checklist required.
ACA	608	160	N/A	0	Certification checklist required.
MDN	620	6.0	N/A	0	
MDN	621	1.0	N/A	0	
MDN	622	2.0	N/A	0	
MDN	623	2.0	N/A	0	
MDN	624	1.0	N/A	0	
MDN	625	1.0	N/A	0	
MDN	626	1.0	N/A	0	
MDN	627	1.0	N/A	0	
GME	630	24.0	N/A	0	
GME	631	1.0	N/A	0	
GME	632	3.0	N/A	0	
GME	633	2.0	N/A	0	
GME	634	1.0	N/A	0	
TME	640	4.0	N/A	0	
TME	641	48.0	N/A	0	
TME	642	16.0	N/A	0	
TME	643	8.0	N/A	0	
TME	644	24.0	N/A	0	
TME	645	24.0	N/A	0	
MSO	650	N/A	N/A	0	Qualification letter required.
UAS	651	N/A	N/A	0	Qualification letter required.
OHS	652	N/A	N/A	0	Qualification letter required.
FSQ	653	N/A	N/A	0	Qualification letter required.
MFS	654	N/A	N/A	0	Qualification letter required.
MDR	655	N/A	N/A	0	Qualification letter required.
OFS	656	N/A	N/A	0	Qualification letter required.
MIA	657	N/A	N/A	0	Qualification letter required.
FSI	658	N/A	N/A	0	Qualification letter required.
AMA	660	N/A	N/A	0	Designation letter required.
JMA	661	N/A	N/A	0	Designation letter required.
JMA	662	N/A	N/A	0	Designation letter required.
MMA	663	N/A	N/A	0	Designation letter required.
MAI	664	N/A	N/A	0	Designation letter required.

Table 1-24.-- Event Chaining Table.

EVENT	CHAINED EVENTS
AMS-231R	AMS-227R
MDR-242R	MDR-241R
MFS-346R	MFS-345R

171. T&R EVENT CONVERSION MATRICES

1. Purpose. To provide a reference to facilitate the conversion of the former T&R event codes to the new event codes now outlined within chapter one. Table 1-22 updates MCO P3500.66 chapter one events (MOS 6821) to new event stages and codes located in chapter one of this Manual. Table 1-23 updates MCO P3500.66 chapter two events (MOS 6842) to new event stages and codes located in chapter one of this Manual. Table 1-24 notes changes and updates made incorporated into 500 and 600 levels.

Table 1-25.-- Previous Chapter One Event Conversion Matrix.

OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT
100 LEVEL		200 LEVEL		300 LEVEL		400 LEVEL	
FAM-100	DELETED	AFM-200	DELETED	AMO-300	DELETED	AMO-400	MDN-625
FAM-101	DELETED	AFM-201	UAS-210	AMO-301	TME-640	AMO-401	DELETED
FAM-102	DELETED	AFM-202	DELETED	AMO-302	DELETED	AMO-402	DELETED
FAM-103	DELETED	AFM-203	DELETED	AMO-303	DELETED	AMO-403	DELETED
EFT-104	FAM-100	AFM-204	DELETED	AMO-304	DELETED	AMO-404	DELETED
EFT-105	FAM-101	AFM-205	AMS-230	AMO-305	DELETED	AMO-405	DELETED
EFT-106	FAM-102	AFM-206	MFS-278	AMO-306	MDR-310	FSC-406	DELETED
EFT-107	FAM-103	AFM-207	OHS-221	AMO-307	MSAT-246	FSC-407	DELETED
EFT-108	FAM-104	AFM-208	DELETED	AMO-308	MSAT-245	FSC-408	DELETED
EFT-109	FAM-105	AFM-209	MDA-265	AMO-309	DELETED	FSC-409	DELETED
EFT-110	FAM-106	AFM-210	WWA-257	FST-310	AMS-225	FSC-410	DELETED
EFT-111	FAM-107	AMO-211	DELETED	FST-311	AMS-226	FSC-411	DELETED
EFT-112	FAM-108	AMO-212	DELETED	FST-312	DELETED	FSC-412	DELETED
EFT-113	FAM-109	AMO-213	OHS-300	FST-313	DELETED	FSC-413	DELETED
EFT-114	FAM-110	AMO-214	DELETED	FST-314	MDA-264	FSC-414	DELETED
EFT-115	FAM-111	AMO-215	DELETED	FST-315	AMS-228	FSC-415	DELETED
ACP-116	DELETED	AMO-216	UAS-213	FST-316	DELETED	FSC-416	DELETED
ACP-117	MDN-626	AMO-217	MCS-251	FST-317	DELETED	FSC-417	DELETED
ACP-118	MDN-627	AMO-218	OHS-302	FST-318	DELETED	FSC-418	DELETED
ACP-119	DELETED	AMO-219	MFS-277	FST-319	WWA-255	FSC-419	DELETED
ACP-120	DELETED	AMO-220	DELETED	FST-320	MPB-271	FSC-420	AMS-229
ACP-121	DELETED	AMO-221	DELETED	FST-321	AMS-233	FSO-421	DELETED
ACP-122	DELETED	AMO-222	MSAT-320	FST-322	DELETED	FSO-422	DELETED
ACP-123	DELETED	AMO-223	MDR-240	FST-323	DELETED		
ACP-124	DELETED	AMO-224	DELETED	FST-324	DELETED		
ACP-125	GME-632	AMO-225	DELETED	FST-325	MCS-330		
ACP-126	DELETED	AMO-226	DELETED				
ACP-127	MFS-347	AMO-227	DELETED				
ACP-128	WWA-258	AMO-228	DELETED				
ACP-129	DELETED	AMO-229	DELETED				

Table 1-26.—Previous Chapter One Event Conversion Matrix--Continued.

OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT
100 LEVEL		**200 LEVEL**		**300 LEVEL**		**400 LEVEL**	
ACP-130	MSO-200	AMO-230	DELETED				
ACP-131	GME-633	AMO-231	MDR-241				
ACP-132	MSO-203	CMO-232	OHS-303				
ACP-133	DELETED						
ACP-134	MSO-202						
ACP-135	DELETED						
ACP-136	DELETED						
ACP-137	DELETED						
ACP-138	DELETED						
ACP-139	DELETED						
ACP-140	GME-634						
ACP-141	DELETED						
ACP-142	MDR-242						
ACP-143	UAS-211						
ACP-144	UAS-214						
ACP-145	WWA-259						
ACP-146	DELETED						
ACP-147	MSO-201						
ACP-148	UAS-212						
ACP-149	UAS-215						
ACP-150	MFS-275						
ACP-151	DELETED						
ACP-152	MCS-250						
ACP-153	OHS-220						
AMO-155	DELETED						

Table 1-27.—Previous Chapter Two Event Conversion Matrix.

OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT
100 LEVEL		**200 LEVEL**		**300 LEVEL**		**400 LEVEL**	
FAM-100	DELETED	FAM-200	MDN-621	PPP-300	DELETED	PPP-400	MPC-421
FAM-101	DELETED	FAM-201	DELETED	PPP-301	MPC-423	PPP-401	DELETED
FAM-102	DELETED	FAM-202	DELETED	PPP-302	DELETED	PPP-402	DELETED
FAM-103	DELETED	FAM-203	DELETED	PPP-303	DELETED	PPP-403	DELETED
FAM-104	DELETED	FAM-204	DELETED	PPP-304	DELETED	PPP-404	DELETED
FAM-105	DELETED	FAM-205	MDN-620	PPP-305	DELETED	PPP-405	DELETED
FAM-106	DELETED	FAM-206	MPC-352	CMO-306	MPC-425	PPP-406	DELETED
FAM-107	DELETED	FAM-207	MPC-351	CMO-307	DELETED	PPP-407	MPC-422
FAM-108	DELETED	FAM-208	MPB-344	CMO-308	MPC-420	PPP-408	DELETED
FAM-109	DELETED	FAM-209	MIA-361	CMO-309	DELETED	PPP-409	MDR-410
FAM-110	DELETED	FAM-210	DELETED	CMO-310	DELETED	PPP-410	DELETED
FAM-111	DELETED	FAM-211	MIA-360	MIA-311	MIA-430	PPP-411	DELETED
FAM-112	DELETED	FAM-212	DELETED	EQP-312	TME-642	PPP-412	DELETED
FAM-113	DELETED	PPP-213	DELETED	EQP-313	DELETED	PPP-413	DELETED
FAM-114	DELETED	PPP-214	DELETED	EQP-314	DELETED		

Table 1-28.—Previous Chapter Two Event Conversion Matrix – Continued.

OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT
100 LEVEL		**200 LEVEL**		**300 LEVEL**		**400 LEVEL**	
FAM-115	DELETED	PPP-215	DELETED	EQP-315	MDR-311		
FAM-116	DELETED	PPP-216	DELETED	EQP-316	TME-641		
FAM-117	DELETED	PPP-217	DELETED				
FAM-118	DELETED	PPP-218	DELETED				
FAM-119	DELETED	PPP-219	DELETED				
FAM-120	DELETED	PPP-220	DELETED				
JCP-121	MDN-622	PPP-221	DELETED				
JCP-122	MDN-623	PPP-222	DELETED				
JCP-123	MDN-624	PPP-223	DELETED				
JCP-124	DELETED	CMO-224	MPC-424				
JCP-125	MIA-363	CMO-225	DELETED				
JCP-126	AMS-227	CMO-226	DELETED				
JCP-127	MDA-262	CMO-227	DELETED				
JCP-128	MDA-263	CMO-228	DELETED				
JCP-129	MDA-260	CMO-229	DELETED				
JCP-130	MDA-261	CMO-230	DELETED				
JCP-131	MSAT-247	CMO-231	AMS-234				
JCP-132	DELETED	CMO-232	DELETED				
JCP-133	MDA-267	CMO-233	MPB-343				
JCP-134	MDA-266	CMO-234	MPB-400				
JCP-135	AMS-231	CMO-235	MPB-401				
JCP-136	AMS-232	MIA-236	DELETED				
JCP-137	MPB-270	MIA-237	MIA-368				
JCP-138	MPC-353	MIA-238	MPB-342				
JCP-139	MFS-276	MIA-239	MPB-341				
JCP-140	WWA-256	MIA-240	MIA-362				
JCP-141	MFS-345	MIA-241	MIA-433				
JCP-142	MFS-346	MIA-242	MIA-364				
JCP-143	DELETED	MIA-243	MIA-365				
JCP-144	OHS-301	MIA-244	MIA-366				
JCP-145	AMS-235	MIA-245	MIA-432				
JCP-146	DELETED	MIA-246	MIA-431				
JCP-147	MPB-340	MIA-247	MIA-367				
JCP-148	DELETED	EQP-248	DELETED				
CMO-149	DELETED	EQP-249	DELETED				
CMO-150	DELETED	EQP-250	DELETED				
		EQP-251	GME-631				
		EQP-252	DELETED				
		EQP-253	DELETED				
		EQP-254	MPC-350				
		EQP-255	DELETED				
		EQP-256	TME-643				

Table 1-29.-– 500 and 600 level Event Status.

OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT
500 LEVEL		**600 LEVEL**	
FSI-500	No Change	SEC-600	No Change
FSI-501	No Change	SEC-601	No Change
FSI-502	No Change	ACA-602	No Change
FSI-503	No Change	ACA-603	No Change
FSI-504	No Change	ACA-604	No Change
MAI-510	No Change	ACA-605	No Change
MAI-511	No Change	ACA-606	No Change
	FSI-505	ACA-607	No Change
		ACA-608	No Change
		ACA-609	AMA-660
		ACA-611	FSQ-653
		ACA-612	DELETED
		FCC-600	DELETED
		FCC-601	DELETED
		FCC-602	ACA-609
		FCC-603	DELETED
		FCC-604	ACA-610
		FCC-605	ACA-611
		FCC-606	DELETED
		JCP-607	JMA-661
		JCP-608	JMA-662
		MMA-609	MMA-663
		FSI-610	FSI-658
		MAI-611	MAI-664
		DES-612	DELETED
		DES-613	DELETED
		NEW	MSO-650
		NEW	UAS-651
		NEW	OHS-652
		NEW	MFS-654
		NEW	OFS-656
		NEW	MIA-657
		NEW	MDR-655
		MMA-609	MMA-663
		FSI-610	FSI-658
		MAI-611	MAI-664
		DES-612	DELETED
		DES-613	DELETED
		NEW	MSO-650
		NEW	UAS-651
		NEW	OHS-652
		NEW	MFS-654
		NEW	OFS-656
		NEW	MIA-657
		NEW	MDR-655

CHAPTER 2

METEOROLOGICAL AND OCEANOGRAPHIC (METOC) SERVICES (MOS 6802, 6877)

FIGURES

TABLES

CHAPTER 2

METEOROLOGICAL AND OCEANOGRAPHIC (METOC) SERVICES (MOS 6802, 6877)

200. CORE COMPETENCY

1. Background. Core Capabilities defined and described in this section are provided to ensure METOC units maintain a common base of training and depth of capabilities. When resources permit and the commander deems additional training would significantly increase unit warfighting capability, training to a level above these base capabilities is encouraged. It is incumbent upon, and expected of the commander to balance any increase in the depth of core capabilities against the long-term combat readiness of the unit.

a. Unit training management (UTM) is the application of the Marine Corps Training Principles and the Systems Approach to Training (SAT) to satisfy the training requirements of commanders at all levels in order to accomplish their wartime mission. Guidance concerning unit training management and the process for establishing effective unit training management programs are contained in MCRP 3-0A, *Unit Training Management Guide*, and form the basis for the development of this T&R Manual. Familiarity with MCRP 3-0A will enhance the understanding of SAT used in the T&R development and Marine Corps UTM principles.

b. Core competency serves as the foundation of the T&R program. Core competencies are those core capabilities and skills that support the Mission Essential Tasks (MET) derived from MCWP 3-35.7 and T/O mission statements, that are realistically expected to be assigned in combat.

2. METOC Services Mission. To collect, assess and disseminate METOC intelligence relevant to friendly and enemy force strengths and vulnerabilities for the planning and execution of operations necessary to characterize the battlespace. This includes atmospheric, space, climatic and hydrographic intelligence for use in the production of Tactical Decision Aids (TDA) and METOC effects matrices.

3. Mission Essential Task List (METL)

a. (UJTL OP 2.2.3) Collect and assess meteorological and oceanographic (METOC) operational information.
- Conduct meteorological satellite sensing, assessment and dissemination operations.
- Conduct meteorological radar sensing, assessment and dissemination operations.
- Conduct meteorological surface observational sensing, assessment and dissemination operations.
- Conduct upper atmospheric profile sensing, assessment and dissemination operations.
- Conduct oceanographic observation operations.
- Conduct climatological and astronomical assessments.
- Conduct analysis of meteorological and oceanographic data.
- Develop forecast products in support of operations.

b. (UJTL SN 2.2.1) Collect information on strategic situation worldwide.

- Provide meteorological, oceanographic and geospatial data.

c. (UJTL TA 1.2.2) Conduct airborne operations.
- Provide meteorological impact assessment to airborne operations.

d. (UJTL TA 1.2.3) Conduct amphibious assault and raid operations.
- Meteorological and oceanographic impact assessment to amphibious assault and raid operations.

e. (UJTL TA 1.1.1) Conduct tactical airlift.
- Provide meteorological impact assessment to tactical airlift and delivery operations.

f. (UJTL TA 1.1.2) Conduct sea and air deployment operations.
- Provide meteorological and oceanographic impact assessment to sea and air deployment operations.

g. (UJTL OP 5.7.5) Coordinate host nation support.
- Coordinate host-nation support for meteorological sensing and data.

h. (UJTL TA 1.1.2) Coordinate coalition support.
- Coordinate coalition support for meteorological sensing and data.

i. (UJTL OP 5.6.1) Integrate operational information operations.
- Integrate meteorological, oceanographic and space weather products into the tactical and operational command and control nodes.

j. (UJTL OP 5.3.1) Conduct operational mission analysis.

4. Table of Organization (T/O). Refer to T/Os 8702 and 8703 (see table 2-1). T/Os for supporting establishments exist, but are not specified herein. T/Os are managed by Total Force Structure Division (TFSD) and Marine Corps Combat Development Command (MCCDC). As of this publication date, METOC units authorized:

Table 2-1. -- METOC T/Os for 8702 and 8703.

8702 (Fixed)	8703 (Rotor)
MWSS METOC UNIT 1 METMF(R) 1 NITES IV Systems 1 METOC Officer 16 METOC Enlisted (9) 6842 (7) 6821	MWSS METOC UNIT 1 METMF(R) 1 NITES IV Systems 1 METOC Officer 15 METOC Enlisted (8) 6842 (7) 6821
MWSS MST DETACHMENT 2 NITES IV Systems 1 METOC Officer 4 METOC Enlisted (2) 6842 (2) 6821	MWSS MST DETACHMENT 2 NITES IV Systems 1 METOC Officer 4 METOC Enlisted (2) 6842 (2) 6821

7. Core Capability. The United States Marine Corps METOC community structure resides within the Air Combat Element (ACE) of the MAGTF; however, by doctrine the community is task organized to provide direct and indirect support to all combat elements of the MAGTF. For clarity, core capabilities of each task organized METOC support unit and detachment are defined.

a. MWSS METOC Unit. A core capable METOC MWSS unit is the highest echelon of Marine Corps METOC support. As such, the MWSS core capable unit must be able to sustain continuous meteorological support for all aviation sorties launching from the parent Forward Operating Base (FOB) and two Forward Arming and Refueling Points (FARPs), and provide a METOC Support Team (MST) to other than ACE requirements. Support capability is based on 24-hour flight/mission operations and assumes greater than or equal to 70 percent operational meteorological equipment readiness and greater than or equal to 90 percent T/O personnel on-hand. If unit equipment is less than 70 percent or T/O personnel is less than 90 percent, core capability will be degraded by a like percentage. A core capable unit is able to accomplish all tasks designated in the unit METL from a main base or expeditionary base.

b. Core Capable MWSS METOC Section. A core capable MWSS METOC Section is able to support 24/7 METOC operations with remote atmospheric sensing at two FARPs when assigned in support of aviation operations. When directed by the MAGTF commander as the MAGTF METOC support center, the unit will collect, assimilate and disseminate METOC data to and from all subordinate METOC units in support of MAGTF operations in theater through applicable command and control nodes. The MWSS METOC Section contains the following organic capabilities/equipment:

Equipment
Direct meteorological satellite ingest
Meteorological radar surveillance
Lightning detection
Two remote surface observation sensors
One local observational sensor
One man-portable meteorological equipment suite

Capability
Command and control interface capability
Covered and uncovered voice communications
Meteorological model retrieval and analysis
Upper atmospheric sensing

c. Core Capable MWSS MST Detachment. A core capable MWSS MST Detachment provides first-in and rapid establishment of METOC support to a MAGTF command element other than ACE. It’s capabilities are limited to surface observational data, data analysis, and forecasting. The MST Detachment contains the following capabilities/equipment:

Equipment
One local observational sensor
Two man-portable meteorological equipment suites

Capability
Uncovered voice communications
Command and control interface capability
Meteorological model retrieval and analysis

8. METL/Core Skills. METOC Core Skills outline and directly support the unit's METL.

a. Table 2-2 outlines METOC abbreviations used herein. Table 2-3 lists core skills with associated METLS.

Table 2-2. -– METOC Officer Core Skills.

CORE SKILL	ABBREVIATION
Administration and Management	ADM
Applied Meteorological Sciences	AMS
MAGTF Forecast Support	MFS
Meteorological Radar	MDR
METOC Impact Assessment	MIA
METOC Product Briefings	MPB
METOC Planning/Coordination	MPC

Table 2-3. -- Core Skill/METL Matrix.

MISSION ESSENTIAL TASK LIST	ADM	AMS	MFS	MDR	MIA	MPB	MPC
Conduct meteorological satellite sensing, assessment and dissemination operations.		X	X		X	X	X
Conduct meteorological radar sensing, assessment and dissemination operations.		X	X	X	X	X	X
Conduct meteorological surface observational sensing, assessment and dissemination operations.		X			X	X	X
Conduct upper atmospheric profile sensing, assessment and dissemination operations.				X	X	X	X
Conduct oceanographic observation operations.		X					X
Conduct climatological, astronomical assessment.		X			X	X	X
Conduct analysis of meteorological and oceanographic data.		X	X	X	X	X	X
Develop forecast products in support of MAGTF operations.	X	X	X	X	X	X	X

9. METOC Core Model Minimum Requirements (CMMR). METOC core competency reflects minimum level of competency a unit must achieve to perform its core capability. Unit core competency is measured in terms of minimum Core Skill Proficiency (CSP) and minimum number of METOC combat leaders.

a. Minimum Unit CSP Requirements. As a minimum, in order to be considered core competent, a unit must have METOC personnel who are proficient in each core skill (unit CSP) as indicated in tables 2-4 and 2-5. In order for an individual to be considered proficient in a core skill (individual CSP), personnel must attain and maintain proficiency in core skill events, as noted in paragraphs 9a(1) and 9a(2) and delineated in tables 2-6 through 2-10.

* NOTE: Proficiency in core plus skills is not required to obtain unit CSP and will not contribute to unit T-level readiness. Below are the METOC community's recommended unit/individual CSP standards:

Table 2-4. -- MWSS METOC Unit CSP Requirements.

CORE/CORE PLUS SKILL	APPRENTICE METOC ANALYST	JOURNEY/MASTER METOC ANALYST	METOC OFFICER
ADM	0	0	1
MSO	5	5	0
UAS	5	5	0
OHS	5	5	0
MDR	2	5	0
MSAT	3	5	0
MCS	3	5	0
AMS	3	5	1
MFS	0	5	1
MIA	0	5	1
WWA	3	5	0
MDA	4	5	1
MPB	1	5	1
MPC	0	1	1

Table 2-5. -- METOC MST Unit CSP Requirements.

CORE/CORE PLUS SKILL	APPRENTICE METOC ANALYST	JOURNEY/MASTER METOC ANALYST	METOC OFFICER
ADM	0	0	1
MSO	2	2	0
UAS	0	2	0
OHS	2	2	0
MDR	1	2	1
MSAT	1	2	0
MCS	1	2	0
AMS	1	2	1
MFS	1	2	1
MIA	0	2	1
WWA	1	2	0
MDA	1	2	1
MPB	1	2	1
MPC	1	1	1

(1) Events Required to Attain Individual CSP. To initially **attain** CSP, METOC personnel must successfully complete all T&R events listed in the table below for each core skill:

Table 2-6. –- Attain METOC Officer Core Skills.

METOC OFFICER CORE SKILL							
	AMS	MPB	MDR	MIA	MFS	MPC	ADM
# EVENTS	5	6	2	9	3	9	8
EVENTS	200 201 202 203 204R	210 211 212 213 214 215	220 221	230 231R 232 233 234 235 236 237 238	240R 241 242	250 251R 252 253R 254 255 256 257 258	260R 261R 262 263 264 265 266 267 268

(2) Events Required to Maintain Individual CSP. To maintain CSP, a METOC must **maintain** proficiency in all T&R events listed in the table below for each core skill.

Table 2-7. —- Maintain METOC Officer Core Skills

METOC OFFICER CORE SKILL							
	AMS	MPB	MDR	MIA	MFS	MPC	ADM
# EVENTS	1	0	0	1	2	2	2
EVENTS	204R			231R	240R	251R 253R	260R 261R

b. Unit Qualification and Designation Requirements. As a minimum, in order to be considered core competent, a unit must have METOC personnel with the leadership designations listed in table 2-8.

Table 2-8. —- Qualification and Designation Requirements.

QUALIFICATIONS	**MWSS**	**MST**
MFS	1	1
DESIGNATION	**MWSS**	**MST**
WTI	1	0

10. Qualifications and Designations Tables. Table 2-8 delineates T&R events required to be completed to attain initial qualifications, re-qualifications, and designations. All stage lectures, briefs, squadron training and prerequisites shall be complete prior to completing final events. Qualification and designation letters signed by the commanding officer shall be placed in the individual training jackets (MC11140 Rev.7-’93).

a. Qualification. A qualification is a status assigned to personnel based on demonstrated proficiency in a specific skill. Specific criteria to achieve qualifications is delineated in table 2-9 and the MAWTS-1 Course Catalog. Upon completion of the qualification criteria, commanding officers shall issue a qualification letter for inclusion into the individual training jackets. Individuals do not lose a qualification when refreshing events. Loss of proficiency (delinquent refresh events) for all associated qualification events constitutes loss of the qualification. Requalification requires demonstrated proficiency by successfully completing all R-coded events associated with the respective qualification (unless waived per paragraph 305 of the Aviation Program Manual). See table 2-7.

b. Designations. A designation is a status assigned to an individual based on leadership ability (see table 2-10). It is a command specific, one-time occurrence and remains in effect until removed for cause. Commanders shall issue a designation letter to the individual upon the occasion of the original designation, for inclusion into the SRB (Page-11 entry) and individual training jacket.

Table 2-9. -- METOC Officer Qualification Requirements.

QUALIFICATION TRACKING CODE	QUALIFICATION REQUIREMENTS
MFS-600	Core Skill Basic Phase of Training

Table 2-10. —- METOC Officer Designation Requirements.

DESIGNATION TRACKING CODE	DESIGNATION REQUIREMENTS
WTI-500	MFS Qualification

c. Instructor Requirements. As a minimum, a unit should maintain the following instructor designations to support METOC operations (see table 2-11). The instructor designations are outlined in the MAWTS-1 Course Catalog and MCO 3500.12C (WTTP).

Table 2-11. -— Instructor Requirements.

	MWSS	MST	FORMAL SCHOOL
WTI-601	0	0	1

11. Training Progression Model. The METOC officer training Progression Model (figure 2-1) provides community recommended core skills, requirements, and designation attainment timelines.

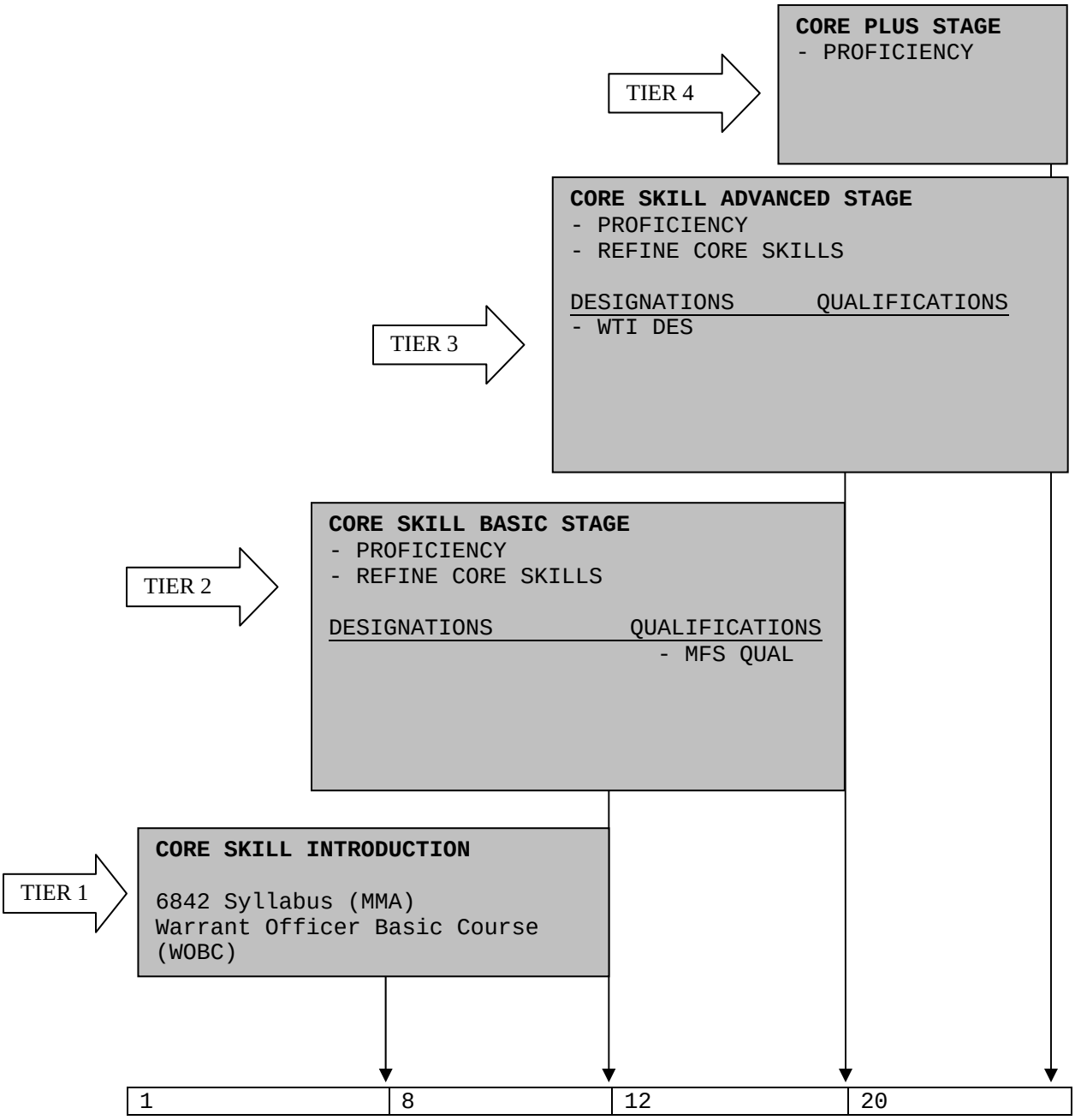

Figure 2-1. -- METOC Officer Training Progression Model.

201. BASIC PROGRAM OF INSTRUCTION (POI)

WEEKS	COURSE/PHASE	ACTIVITY
1-12	Warrant Officer Basic Course	MCCDC
13-65	Core Skill Basic Training	Tactical Squadron
66-112	Core Skill Advanced Training	Tactical Squadron
113-119	Weapons and Tactics Instructor	MAWTS-1
120-167	Core Plus Training	Tactical Squadron

202. POI FOR METOC REFRESHER TRAINING

WEEKS	COURSE/PHASE	ACTIVITY
1-21	Core Skill Basic Training	Tactical Squadron
22-45	Core Skill Advanced Training	Tactical Squadron
46-69	Core Plus Training	Tactical Squadron

203. POI FOR METOC FORMAL SCHOOLS INSTRUCTOR

WEEKS	COURSE/PHASE	ACTIVITY
1-7	Weapons and Tactics Instructor	MAWTS-1

212. EVENT TRAINING FOR METOC PERSONNEL

1. Core Skill Introduction Phase. See paragraph 231.

STAGE	NO. EVENTS	NO. HOURS	CRP
N/A	0	0	60.0

2. Core Skill Basic Phase

STAGE	NO. EVENTS	NO. HOURS	CRP
(AMS) Applied MET Science	5	15.5	2.0
(MPB) METOC Product Briefing	6	84.0	2.0
(MDR) Meteorological Radar	2	12.0	2.0
(MIA) METOC Impact Assessment	9	32.0	3.0
(MFS) MAGTF Forecast Support	3	24.0	2.0
(MPC) METOC Planning/Coordination	9	241.0	2.0
(ADM) Administration	9	47.0	2.0
TOTAL FOR PHASE:	43	455.5	15.0
ACCUMULATION FOR BASIC POI:	43	455.5	75.0

3. Core Skill Advanced Phase

STAGE	NO. EVENTS	NO. HOURS	CRP
(MPC) METOC Planning/Coordination	3	35.0	10.0
(ADM) Administration	10	182.0	10.0
TOTAL FOR PHASE:	13	217.0	20.0
ACCUMULATION FOR BASIC POI:	56	672.5	95.0

4. Core Plus Phase

STAGE	NO. EVENTS	NO. HOURS	CRP
(ADM) Administration	1	18.0	1.0
(MPC) METOC Planning/Coordination	2	48.0	4.0
TOTAL FOR PHASE:	3	66.0	5.0
ACCUMULATION FOR BASIC POI:	59	738.5	100.0

222. EVENT TRAINING FOR METOC REFRESHER

1. Core Skill Introduction Phase. There are no refresher events for this phase.

2. Core Skill Basic Phase

STAGE	NO. EVENTS	NO. HOURS
(AMS) Applied MET Science	1	10.0
(MPB) METOC Product Briefing	0	0.0
(MDR) Meteorological Radar	0	0.0
(MIA) METOC Impact Assessment	1	3.0
(MFS) MAGTF Forecast Support	1	6.0
(MPC) METOC Planning/Coordination	2	32.0
(ADM) Administration	2	3.0
TOTAL FOR PHASE:	7	54.0
ACCUMULATION FOR BASIC POI:	7	54.0

3. Core Skill Advanced Phase. There are no refresher events for this phase.

4. Core Plus Phase. There are no refresher events for this phase.

EVENT TRAINING FOR INSTRUCTOR TRAINING

STAGE	NO. EVENTS	NO. HOURS
(WTI) Weapons Tactics Instructor	3	487
TOTAL FOR PHASE:	3	487
ACCUMULATION FOR BASIC POI:	3	487

230. EVENT PERFORMANCE REQUIREMENTS

1. Purpose. The purpose of this Manual is to enhance combat readiness of METOC units to meet mission requirements.

2. General

a. Because this Manual is unclassified, DC AVN and CG MCCDC encourage squadrons to use the full range of current, newly developed and proven tactics.

b. The Core Skill Introduction phase is designed for instructors and trainees to maximize training and minimize syllabus support hours.

c. An instructor shall evaluate all events annotated with an "E" per Aviation T&R Program Manual, chapter 3. Instructors are responsible for assessing performance during a particular event. They are normally designated or MAWTS-1 certified.

d. The METOC officer (MO) shall ensure designation, qualification and requirement codes are entered in the appropriate event tracking software and the individual training jackets.

3. Formal School Requirements. Events contained in this Manual outline training standards OccFld 6800. Currently, initial accession standards are met by two formal school courses, the Marine Corps Weather Observer (MCWO) Course and the Meteorological and Oceanographic Analyst (MOAF) Course. However, the requirement to introduce all core skills within a single curriculum at initial accession has been validated. This curriculum includes current MCWO and MOAF objectives. During the transition phase to a single curriculum, the following guidance shall be utilized to ensure training standards are met:

a. Personnel attending the MCWO and MOAF Courses.

(1) Events completed during the courses shall be recorded in the individual training jackets and appropriate tracking software.

(2) Personnel shall not be assigned to any core skill advanced stage of training until completion of MOAF Course.

(3) Pre-requisites to attend the MOAF Course are:

(a) Oceanography Course.

(b) Marine Corps Distance Learning Course Basic Meteorology.

(c) Apprentice METOC Analyst Designation.

(d) Forecast Support Qualification.

b. Personnel attending the Air Force Weather Apprentice Course (AFWAC).

(1) Personnel who have completed AFWAC shall be assigned to the METOC Doctrine (MDN) stage of training upon assignment to their first duty station.

(2) Assignment to stages of training after completion of the level 100 and MDN events *shall be dictated by unit readiness requirements*. The syllabus contained in this Manual provides a logical progression of training and should be followed as close as possible.

4. Academic Training. Pre-requisite academic training for events is the responsibility of the METOC unit. This Manual provides METOC units with the standards of training to obtain and maintain proficiency in the MOS. MAWTS, MARFOR and COMCAB METOC officers shall coordinate the development of lesson plans to support this syllabus as required.

5. References. References provided in Appendix D shall be utilized to ensure safe and standardized training procedures, performance standards, grading criteria and equipment operations.

6. Implementation. Squadron commanders are the designating authority. Commanders may delegate, in writing, designation authority to the MO or other personnel as conditions warrant. METOC Analyst Instructors (MAI) that have personnel assigned to the Fleet Assistance Program (FAP) shall report Combat Readiness Percentages (CRP) to the parent command.

7. T&R Event Composition. MCO P3500.14H, chapter 2, outlines event components. References utilized in the development and that directly support the syllabus within this Manual are listed in Appendix B. An event contained within a T&R manual is an individual or collective training standard and the following elements, dependent on the stage in which they are contained:

1/	2/	3/	4/	5/	6/
SAM-XXX	0.5	T,C,R,	E	EQUIP	

Goal. State the terminal-learning objective.

Requirement. List specific tasks for the event; indicate what the crew/individual must accomplish.

Performance Standard. Describe the measurable level of proficiency for that event.

Prerequisite. Provides a listing of academic training or other T&R events that must be completed before satisfying the task.

External Syllabus Support. A listing or description of the external support requirements that may be required to satisfy completion of the task. May include range requirements, support aircraft, targets, training devices, or other personnel and equipment.

NOTES:

1/ Events are coded per Appendix B of Aviation T&R Program Manual.

2/ Projected event duration is furnished as a planning tool.

3/ Denotes the applicable Program of Instruction (Basic POI is understood), Z is reserve, R is refresher.

4/ An "**E**" indicates an Evaluated event.

5/ The equipment or activity subcategory is listed **“G”** = Garrison Equipment; **“M”** = METMF(R); **“N”** = NITES IV;

6/ Requirement Code: **“L”** = live Training; **“S”** = simulator training; **“L/S”** = live preferred/simulator optional; **“S/L”** =

simulator preferred/live optional; **"N"** = Night; Where contained within **()** denotes optional conditions.

7/ Elements of the events may be deleted if not applicable. (i.e. External Syllabus Support may be deleted if not required for the event).

231. CORE SKILL INTRODUCTION PHASE. Chapter 1 of this Manual constitutes the Core Skill Introduction phase of training for METOC Officers. An individual must be core skill proficient (100 percent CRP) in the 6842 syllabus prior to beginning the 6802/6877 syllabus.

232. CORE SKILL BASIC PHASE

1. Applied Meteorological Sciences (AMS)

a. Purpose. To maintain advanced principles and concepts relating to applied meteorological and oceanographic sciences.

b. General

(1) METOC Officers must be designated as MMA (chapter 1, event MMA-663) prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall be proficient in the application and analysis of meteorological charts and products.

c. Event Training. (5 Events, 15.5 Hours).

AMS-200	2.0	E	G,M,N	L

Goal. Forecast tropical cyclone development and movement.

Requirement. METOC products (live or canned data) and under conditions for tropical development, analyze for tropical cyclone development, movement, and intensity. Compute a 96-hour prognostic for movement/intensity of the system.

(1) Interpret cyclone warnings and advisories.
(2) Modify computer generated tropical cyclone models and available centrally prepared products based on climatological summaries of cyclone storm tracks, forecasting rules, and local area requirements.
(3) Forecast tropical cyclone development, movement, and intensity using satellite data and other applicable products.
(4) Interpret METOC data parameters.
(5) Prepare a brief to include at a minimum:
    (a) Recommendation to cyclone conditions of readiness.
    (b) Cyclone categories.
    (c) Impacts to cyclone evacuation plan.
    (d) Impacts based on cyclone storm surge forecasts.

Performance Standard. Meet requirements per local METOC SOP. Repetition of tasks shall be carried out until an 80% accuracy level is achieved in content and format.

AMS-201	1.0	E	G,M,N	L

Goal. Produce a limited data forecast.

Requirement. Given three METOC products and a location, write a plain language forecast for a period of 48 hours and verify for accuracy.

Performance Standard. The elements of the forecast shall be verified to an 80% accuracy.

AMS-202	0.5	E	N/A	L

Goal. Forecast severe weather.

Requirement. Given required charts and a designated area of responsibility (AOR), analyze and forecast for the severe weather elements listed and provide meteorological reasoning for each:

(1) Convective phenomena.
(2) Non-convective phenomena.

Performance Standard. Derived forecast must display sound meteorological reasoning.

AMS-203	2.0	E	N/A	L/S

Goal. Comprehend Global and Regional METOC models.

Requirement: Identify and state the strengths and weaknesses for each numerical model applicable to a given AOR.

Performance Standard. Retrieve a given numerical model and accurately identify its strengths and weaknesses.

AMS-204	10.0	R	E	N/A	L/S

Goal. Develop synoptic scale forecast using prognosis techniques.

Requirement. Forecast synoptic scale features by completing the listed items:

(1) Initialize model data.
(2) Analyze or re-analyze:
    (a) Surface chart.
    (b) Thickness chart.
    (c) Vorticity.
    (d) Standard Upper Air chart set.
    (e) Satellite imagery.
    (f) Radar imagery.
    (g) Weather depiction charts.
(3) Develop forecasted intensity and location of weather features.
(4) Discuss meteorological reasoning for forecasted elements.

Performance Standard. Identify, depict and provide technical reasoning for meteorological features depicted to an 80% accuracy.

Prerequisite. AMS-200, AMS-201, AMS-202, and AMS-203.

2. METOC PRODUCT BRIEFINGS (MPB)

a. Purpose. To refine dynamic briefing techniques relating to METOC operations.

b. General

(1) METOC Officers must be designated as MMA (chapter 1, event MMA-663) prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall be proficient in the application and analysis of meteorological charts and products to successfully brief METOC conditions to a specific audience.

c. Event Training. (6 Events, 84.0 Hours).

MPB-210	8.0		E	N/A	L

Goal. Conduct METOC training briefs.

Requirement. Develop and brief the specialized/tailored weather briefs listed, but not limited to the following:

(1) Seasonal weather briefs.
(2) Holiday/travel Briefs.
(3) Special events.
(4) METOC capabilities brief.

Performance Standard. Prepare and conduct each listed brief once. Development time for each brief is one week. Content and verification of forecasted elements shall be verified for 80% accuracy.

MPB-211	6.0	R	E	N/A	L

Goal. Conduct a pre-deployment brief.

Requirement. Prepare and conduct a mission specific deployment brief. Include the following:

(1) Basic forecasted meteorological parameters.
(2) Surface observation and TAF.
(3) Flight weather products.
(4) Types of severe weather warnings and advisories.
(5) Available and/or applicable METOC software.
(6) NATOPS requirements.
(7) METOC support capabilities.
(8) Climatological impact assessment.
(9) Type of terrain in area of interest and influence to METOC parameters.

Performance Standard. Complete the briefing within 8-hours of receipt of RFI per MCWP 3-35.7.

Prerequisite. AMS-204.

MPB-212 3.0 E N/A L

Goal. Brief METOC capabilities.

Requirement. Brief current METOC mission support capabilities.

(1) Assess the METOC requirements of the targeted audience.
(2) Prepare the METOC capabilities brief.
(3) Conduct the METOC capabilities brief.

Performance Standard. Brief must contain all information pertaining to the METOC support missions per applicable references.

MPB-213 40.0 R E N/A L

Goal. Conduct a climatology brief.

Requirement. Prepare and conduct a 3-month climatology brief that includes the listed items:

(1) Overview.
(2) Geography.
(3) Terrain.
(4) Operational interests (if applicable).
(5) Oceanography.
(6) Astronomical.
(7) Seismic activity.
(8) Historical EM conditions.
(9) General climate.
(10) Specific weather elements (if applicable).
    (a) Relative humidity.
    (b) Thunderstorms/precipitation.
    (c) Prevailing winds.
    (d) Sky condition.
    (e) IFR/VFR/Marginal VFR percentages.
    (f) Assessments and recommendations.
(11) Hydrology (as required).

Performance Standard. Generate the brief within 48-hours of receipt of RFI per MCWP 3-35.7.

Prerequisite. AMS-204.

MPB-214 3.0 E N/A L

Goal. Conduct an Aviation Strike Brief.

Requirement. Prepare and conduct an aviation (mission specific) strike weather brief within 3-hours. Include the following information:

(1) Nephanalysis.
(2) Enroute weather.
    (a) Sky condition.
    (b) Weather.
    (c) Visibility/Slant range visibility (NM).
    (d) Sea surface temperature/in-water survival time.
    (e) Winds.
    (f) Temperatures.
    (g) Turbulence.
    (h) Icing.
    (i) Contrail formation.
    (j) Ditch heading.
(3) Target Area Weather (repeat for each area).
    (a) Sky condition.
    (b) Weather.
    (c) Visibility/slant range visibility (NM).
    (d) Surface winds.
    (e) Maximum/minimum temperatures.
    (f) Cloud tops/ceilings.
    (g) Freezing level.
    (h) D-Values.
(4) Astronomical Data.
    (a) Sunrise/Sunset.
    (b) Sun elevation angles/azimuth.
    (c) Beginning/ending civil/nautical twilights.
    (d) Moonrise/moonset.
    (e) Lunar illumination.
    (f) Moon angles elevation/azimuth.
    (g) Lux values.
(5) 48-hour outlook.
(6) Tactical assessment.
(7) Electro-Optical sensor performance predictions.

Performance Standard. Complete the briefing within 24-hours of receipt of RFI per MCWP 3-35.7.

MPB-215 24.0 E N/A L

Goal. Conduct an amphibious warfare brief.

Requirement. Prepare and present an amphibious warfare brief that contains the listed items:

(1) Current weather information.
(2) 24-hour weather information.
(3) Aviation parameters.
(4) Surf forecast.
(5) Tactical assessment.
(6) Atmospheric refractive summary.
(7) Astronomical data.
(8) 24-hour radiological/chemical fallout forecast.

Performance Standard. Complete the briefing with 24-hours of receipt of RFI per MCWP 3-35.7.

3. METEOROLOGICAL RADAR (MDR)

a. Purpose. To demonstrate management skills pertaining to MDR equipment and operations.

b. General

(1) METOC Officers must be designated as MMA (chapter 1, event MMA-663) prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall be proficient the operation of all currently fielded meteorological radars.

c. Event Training. (2 Events, 12.0 Hours).

MDR-220	6.0		E	N/A	L

Goal. Manage meteorological radar operations.

Requirement. Complete listed tasks to conduct management of Doppler radar operations:

(1) Establish and coordinate background maps with radar operation center.
(2) Coordinate Doppler radar maintenance.
(3) Identify and implement software and hardware configurations.
(4) Identify and configure radar user functions.
(5) Establish radar regular and limited access adaptation data.
(6) Participate in unit radar committee meetings.
(7) Establish radar alerts and thresholds.
(8) Establish one-time product request procedures.
(9) Establish radar product set lists.
(10) Establish dedicated and non-associated radar product generator (RPG) lists.
(11) Set radar system clock.

Performance Standard. Completion of requirement must not violate local or RDA system integrity.

MDR-221	6.0	R	E	N/A	L

Goal. Manage meteorological radar system(s) management.

Requirement. Given a Doppler radar system, applicable operating manuals and understanding the configurations, limitations, and capabilities of Doppler radar systems, display a working knowledge of Doppler radar management functions. Configuration should allow for ingest, analysis, manipulation, and production of derived radar products. Perform, at a minimum, the following tasks:

(1) Ensure configuration is commensurate with desired product generation.
    (a) Pulse repetition frequency.
    (b) Sample rates.
    (c) Gate width.
    (d) Beam width.
    (e) Operating frequency.
    (f) Scanning speeds.

(g) Scanning elevations.
(2) Archive generated products.
(3) Discuss the Doppler radar product algorithms and the products.
(4) Ensure that Doppler radar products are available through electronic means customers.
(5) Ensure hazards of electromagnetic radiation to fuels (HERF) procedures are implemented and adhered to.
(6) Ensure hazards of electromagnetic radiation to personnel (HERP) procedures are implemented and adhered to.
(7) Ensure hazards of electromagnetic radiation to ordinance (HERO) procedures are implemented and adhered to.

Performance Standard. Complete requirement so as not to adversely affect network communications, radar system software or hardware.

Prerequisite. MDR-220.

4. METOC IMPACT ASSESSMENT (MIA)

a. Purpose. To develop METOC impacts to MAGTF operations.

b. General

(1) METOC Officers must be designated as MMA (chapter 1, event MMA-663) prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall be an expert in the application of METOC impacts to all facets of warfare.

c. Event Training. (9 Events, 32.0 Hours).

MIA-230	8.0	R	E	N/A	L

Goal. Conduct a mission analysis.

Requirement. Conduct a thorough analysis of the mission, including:

(1) Situation.
(2) Mission.
(3) Execution.
(4) Administration and Logistics.
(5) Command and Control.

Performance Standards. Analysis shall be verified for content to 80% accuracy.

MIA-231	3.0	R	E	N/A	L

Goal. Produce mission specific products.

Requirement. Utilizing Tactical Decision Aids, produce:

(1) Historical environmental prediction condition (HEPC) summary.
(2) Refractive index profile.

(3) Radar coverage diagrams.
(4) Radar propagation loss.
(5) Platform vulnerability.
(6) Probability of detection.
(7) Electronic support measures.
(8) Electronic countermeasures.
(9) Solar lunar products.
(10) Weapons performance.

Performance Standard. Complete briefing within 3-hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-230 and read applicable chapter of MCWP 3-35.7.

MIA-232 3.0 E N/A L

Goal. Assess METOC impacts to amphibious operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, assess and brief the METOC impacts on operations. The assessment shall include the following essential elements of information (EEI):

(1) Bioluminescence.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Illumination.
(8) Currents.
(9) Tides.
(10) Water temperature.
(11) Sea state.
(12) Surf conditions.
(13) Hazardous weather.
(14) Ice conditions.
(15) Bathymetry.
(16) Wind chill.
(17) WBGTI.
(18) Submersion survival time.

Performance Standard. Complete the briefing within 3-hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-231 and read applicable portion of MCWP 3-35.7.

MIA-233 3.0 E N/A L

Goal. Assess METOC impacts on aviation operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, assess and brief the METOC impacts on operations. The assessment shall include the following EEI:

(1) Sea surface temperature.
(2) Sky condition.
(3) Visibility (surface/slant).
(4) Winds (surface and aloft).
(5) Temperature.
(6) Precipitation.
(7) Hazardous weather.
(8) Turbulence.
(9) Icing.
(10) Hail.
(11) Astronomical data.
(12) Humidity (relative and absolute).
(13) Pressure.
(14) Ditch headings.
(15) Wind chill.
(16) WBGTI.
(17) Submersion survival time.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-231 and read applicable portion of MCWP 3-35.7.

MIA-234	3.0	E	N/A	L

Goal. Assess METOC impacts on ground operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, assess and brief the METOC impacts on operations. The assessment shall include the following EEI:

(1) River stage and currents.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Snow/ice depth and coverage.
(8) Freeze and thaw depth.
(9) Hazardous weather.
(10) Astronomical data.
(11) Sea/shore conditions (tides, currents, surf, and water temperature).
(12) Vertical wind profile.
(13) Wind chill.
(14) WBGTI.
(15) Submersion survival time.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-231 and read applicable portion of MCWP 3-35.7.

MIA-235 3.0 E N/A L

Goal. Assess METOC impacts on intelligence operations.

Requirement. Utilizing METOC equipment and after conducting a thorough mission analysis, assess and brief the METOC impacts on operations. The assessment shall include the following EEI:

(1) Hazardous weather.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Snow depth and coverage.
(8) Astronomical data.
(9) EM propagation.
(10) Wind chill.
(11) WBGTI.
(12) Submersion survival time.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-231 and read applicable portion of MCWP 3-35.7.

MIA-236 3.0 E N/A L

Goal. Assess METOC impacts on communication operations.

Requirement. Assess and brief the METOC impacts on operations. The assessment shall include the following EEI:

(1) Space weather.
(2) Wind.
(3) Temperature profile.
(4) Precipitation.
(5) Snow depth and coverage.
(6) EM propagation.
(7) Hazardous weather.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-231 and read applicable portion of MCWP 3-35.7.

MIA-237 3.0 E N/A L

Goal. Assess METOC impacts on Chemical, Biological, Radiological and Nuclear (CBRN) defensive operations.

Requirement. Assess and brief the METOC impacts on operations. The assessment shall include the following EEI:

(1) Hazardous weather.
(2) Sky condition.
(3) Humidity.
(4) Wind.
(5) Temperature.
(6) Atmospheric stability.
(7) Precipitation.
(8) EM propagation.
(9) Wind chill.
(10) WBGTI.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-231 and read applicable portion of MCWP 3-35.7.

MIA-238 3.0 E N/A L

Goal. Assess METOC impacts on logistical operations.

Requirement. Assess and brief METOC impacts on operations. The assessment shall include the following EEI:

(1) Bathymetry.
(2) Sky condition.
(3) Visibility.
(4) Wind.
(5) Temperature.
(6) Precipitation.
(7) Snow depth and coverage.
(8) Astronomical data.
(9) EM propagation.
(10) Hazardous weather.
(11) Currents.
(12) Tides.
(13) Water temperature.
(14) Sea state.
(15) Surf conditions.
(16) Ice conditions.
(17) Wind chill.
(18) WBGTI.
(19) Submersion survival time.

Performance Standard. Complete briefing within 3 hours of receipt of RFI. Completion will not be awarded until content and format are 80% accurate per applicable references.

Prerequisite. MIA-231 and read applicable portion of MCWP 3-35.7.

5. MAGTF FORECAST SUPPORT (MFS)

a. Purpose. To master advanced METOC principles and concepts relating to METOC operations.

b. Academic Training. Academic training will be conducted prior to and concurrently with required events. An academic training event, once completed, can be credited for follow on training events.

c. Event Training. (3 Events, 24.0 Hours).

MFS-240	6.0	R	E	C	L

Goal. Produce mission specific meteorological products that support MAGTF operations.

Requirement. Produce locally prepared products listed and discuss the content thereof:

(1) Chemical downwind message.
(2) Blast forecast.
(3) Drop zone forecast.
(4) Sound propagation forecast.

Performance Standard. Forecasts shall be verified to an 80% accuracy. Products must be in accordance with applicable orders.

Prerequisite. AMS-204, MDR-221, MPB-211, MPB-212, MPB-213 and MIA-231.

MFS-241	12.0	E	N/A	L/S

Goal. Generate a climatology brief.

Requirement. Research and prepare a three-month climatology brief for a specified location. Include the following:

(1) Overview.
(2) Geography.
(3) Terrain.
(4) Oceanography.
(5) Astronomical.
(6) Seismic activity.
(7) Specific weather elements, if applicable:
    (a) Relative humidity.
    (b) Temperature.
    (c) Thunderstorms/precipitation.
    (d) Prevailing winds.
    (e) Sky condition.
    (f) IFR/VFR/Marginal VFR percentages.
    (g) Ice thickness and flow.
    (h) Volcanic activity.

Performance Standard. Presentation shall be completed within 12 hours. It is recommended that the designated location or AOR for the climatology presentation be located in a foreign and/or

unfamiliar country.

MFS-242	6.0	E	G,M,N	L/S

Goal. Demonstrate mastery of oceanographic and littoral warfare products.

Requirement. Produce and/or assess the following oceanographic/littoral warfare products:

(1) Sea Surface Temperature Charts.
(2) Current and Tidal Charts.
(3) Modified Surf Index.
(4) Beach Survey Charts.
(5) Specialized Analyzed Image Littoral (SAIL).
(6) Specialized Tactical Oceanographic Information Chart (STOIC).
(7) Rapid Environmental Assessment Chart Tactical (REACT).
(8) Riverine Survey Charts.

Performance Standard. State how the above listed charts pertain the MAGTF support to 80% accuracy.

6. METOC PLANNING AND COORDINATION (MPC)

a. Purpose. Demonstrate expertise in the METOC Officer’s ability to attain and maintain planning and coordination for mission specific support.

b. General

(1) METOC Officers must be designated as MMA (chapter 1, event MMA-663) prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall be adept at planning and coordinating all facets of METOC support to the MAGTF.

c. Event Training. (9 Events, 241.0 Hours).

MPC-250	6.0	E	N/A	L

Goal. Introduce METOC logistics and external support requirements.

Requirement. Exhibit knowledge of listed logistical and external support programs and requirements:

(1) Hazardous materials (HAZMAT).
(2) Marine Aviation Logistics Squadron (MALS) support structure.
(3) Mobile facility lift and transportation requirements.
(4) Time Phased Force Deployment Data (TPFDD).
(5) Equipment Density Lists (EDL).

Performance Standard. Without error, identify and discuss logistical and external support in accordance with orders and regulations governing the logistical support programs.

MPC-251	16.0	R	E	N/A	L

Goal. Embark the MetMF(R).

Requirement. Embark the MetMF(R) to and from a designated area. Perform the following:

(1) Supervise pack up of the MetMF(R).
(2) Supervise lift.
(3) Transport classified materials.
(4) Unpack the MetMF(R) at the designated area.
(5) Establish METOC support.

Performance Standard. Within 16 hours, embark the MetMF(R) and perform operational checks.

MPC-252	48.0	E	N/A	L

Goal. Perform system management functions of applicable subsystems inherent to the MetMF(R).

Requirement. Complete listed tasks to configure and manage the components of the METMF(R) ensuring continuous data ingest and dissemination:

(1) Processing Subsystem (PCS).
    (a) Establish and maintain integrity of operating systems.
    (b) Establish and configure components of the network.
    (c) Install authorized software upgrades and patches.
    (d) Optimize the effective flow of meteorological data throughout communication paths.
    (e) Establish network naming conventions and paths of received data.
    (f) Maintain meteorological system interface with network and web dissemination and storage.
    (g) Obtain proper keying material for use in CCI equipment.
(2) Meteorological Radar System (MRS).
    (a) Establish and maintain system setup and configuration parameters.
    (b) Archive/restore configuration data to tape. (Level 0 Dump tape).
    (c) Install system software when required.
    (d) Establish standard processes for desired products.
    (e) Establish standard product set for each established process.
    (f) Configure network interfaces within the operating system and application software.
    (g) Establish and manage scheduled processes.
    (h) Create underlay/overlays for desired AO.
    (i) Ensure configuration and operation are within frequencies allocated and in accordance with safety requirements.
(3) Meteorological Satellite Subsystem (MSS).
    (a) Establish and maintain system setup and configuration parameters.
    (b) Archive/restore configuration data to tape. (Level 0 Dump tape).
    (c) Install system software when required.

(d) Configure network interface within the operating system.
(e) Maintain and follow file-naming conventions.
(f) Configure automatic export of satellite imagery to meet mission requirements.

(4) Communications Subsystem (CSS).
(a) Obtain appropriate keying material for system.
(b) Ensure appropriate frequencies have been allocated for use.
(c) Ensure configuration and operation are within frequencies allocated and in accordance with safety requirements.
(d) Establish and maintain system setup and configuration parameters.

(5) Local/Remote Sensor Subsystem (LSS/RSS).
(a) Configure software and hardware interfaces for data reception.
(b) Configure software for data export and archive.
(c) Establish and maintain system setup and configuration parameters.

(6) Rawinsonde subsystem (RWS).
(a) Configure UMQ-12 for different locations and output types.
(b) Establish and maintain system setup and configuration parameters.

Performance Standard. Requirement must be meet without violating component, system or network integrity.

MPC-253 16.0 R E N/A L

Goal. Master the Defense Messaging System (DMS).

Requirement. Create listed messages:

(1) Casualty Reports (CASREP).
(2) Weather Forecast (WEAX).
(3) Joint Operational Area Forecast (JOAF).
(4) Tactical Atmospheric Summary (TAS).
(5) Assault Forecast (ASLTFCST).
(6) Amphibious Objective Area Forecast (AOAFCST).
(7) Strike Forecast (STRKFCST).
(8) Chemical Downwind Message (CDM).

Performance Standard. Messages must comply with applicable references.

MPC-254 32.0 E N/A L

Goal. Conduct deployment requirements and procedures.

Requirement. Accomplish the following tasks:

(1) Plan a deployment of tactical METOC assets to a Forward Operating Base (FOB).
(2) Coordinate transportation of equipment (classified and unclassified) to designated area.

(3) Coordinate personnel transportation and billeting.
(4) Conduct appropriate inspections.
(5) Coordinate network connectivity (where available).
(6) Coordinate logistical support.

Performance Standard. Personnel and equipment must arrive at the designated area to establish METOC support capabilities.

MPC-255 24.0 E N/A L

Goal. Submit METOC reports.

Requirement. Draft and submit the listed reports:

(1) Validate and submit Joint Universal Lessons Learned Summary (JULLS) report.
(2) Validate and submit METOC After Action Reports.
(3) Validate and submit Marine Corps Lessons Learned System (MCLLS) reports.
(4) Validate and submit Universal Needs Statement (UNS) reports.
(5) Validate and submit equipment casualty reports (CASREP).

Performance Standard. Content and format will be in accordance with orders and directives governing the individual report.

MPC-256 51.0 E N/A L

Goal. Submit input to annex of operational orders.

Requirement. Submit METOC input to the annexes of operational orders and LOIs to the requesting command. Complete the requirement on each of the following:

(1) Intelligence operations, Annex B.
(2) Environmental operations, Annex H.
(3) Collection plan, Annex J.
(4) Communications and information systems, Annex K.

Performance Standard. Draft METOC input must be in Joint Operational Planning and Execution System (JOPES) or applicable format, contain all required information to support designated mission and designate all external requirement for METOC support per applicable references.

MPC-257 24.0 E N/A L

Goal. Conduct METOC support operations for MAGTF.

Requirement. Provide METOC support through all phases of MAGTF planning and execution operations. Complete the following items:

(1) Participate in rapid response planning process (R2P2) training and operation-planning teams (OPT).
(2) Coordinate METOC support requirements for the MEU.

(3) Liaison with MEF METOC units on METOC support issues.
(4) Identify and correct METOC support deficiencies.
(5) Provide operational planning products in support of the Intelligence Preparation of the Battlefield (IPB) process.

Performance Standard. Ensure Marine METOC interest and planning requirements are addressed.

MPC-258 24.0 E N/A L

Goal. Introduce joint operation METOC functions.

Requirement. Be familiar with the following tasks:

(1) Coordinate joint METOC support.
(2) Liaise with component METOC units/commands.
(3) Identify and correct joint METOC support deficiencies.
(4) Provide operational planning products in support of the IPB process.

Performance Standard. Ensure that Marine METOC interest and planning requirements are addressed.

7. ADMINISTRATION (ADM)

a. Purpose. Demonstrate proficiency of properly administering METOC personnel and programs under their cognizance.

b. General

(1) METOC Officers must be designated as MMA (chapter 1, event MMA-663) prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall be adept in the proper administrative functions necessary to support MAGTF operations.

c. Event Training. (9 Events, 47.0 Hours).

ADM-260 2.0 R E N/A L

Goal. Describe METOC support architecture.

Requirement. State and discuss the missions, composition, equipment and capabilities of the following METOC support unit/billets:

(1) MCAS/MCAF METOC support.
(2) Marine Wing Support Group (MWSG).
(3) Marine Expeditionary Force (MEF).
(4) METOC Support Team (MST).
(5) Marine Wing Support Squadron (MWSS) Weather Service Section.
(6) Senior METOC Officer (SMO).
(7) Joint METOC Officer (JMO).
(8) Joint METOC Forecast Center (JMFU).
(9) Air Combat Element Weather Officer (ACE WXO).

Performance Standard. Identify components, billets, unit supported, equipment inherent to each support element and capabilities of the billets/components.

ADM-261	1.0	R	E	N/A	L

Goal. Familiarization of security regulations, orders and instructions governing classified materials and software.

Requirement. Identify and state regulations, orders and instructions governing security. State the general content of each.

Performance Standard. Read and comprehend all applicable orders that pertain to the mission.

ADM-262	1.0		E	N/A	L

Goal. Utilize orders and directives governing METOC support.

Requirement. Provide a verbal overview of the following references:

(1) Desktop procedures.
(2) NAVMETOCCOMINST 3141.2 Surface METAR Observation User's Manual.
(3) OPNAVINST 3140.24(_) Warning and Conditions of Readiness.
(4) NAVMETOCCOMINST 3142.1(_) Pilot Reports.
(5) OPNAVINST 3710.7(_) NATOPS Manual.
(6) Local Destructive Weather Order.
(7) MCWP 3-35.7 MAGTF METOC Support.
(8) CJCSI 3810.01B
(9) JP-3-59 Joint Doctrine, Tactics, Techniques, and Procedures for METOC Operations.

Performance Standard. Define the contents of the above listed references to an 80% accuracy.

ADM-263	3.0		E	N/A	L

Goal. Manage logistical support program.

Requirement. Supervise and maintain METOC logistical support programs:

(1) Supply requisitions.
(2) Equipment outages.
(3) Fiscal.

Performance Standard. Must comply with applicable orders and directives.

ADM-264	2.0		E	N/A	L

Goal. Promulgate equipment casualty reporting procedures.

Requirement. Given a meteorological and oceanographic (METOC) equipment casualty, report it to higher headquarters via a naval message in casualty report (CASREP) format within 24 hours:

(1) Identify an equipment casualty.
(2) Supervise drafting of casualty reports.
(3) Contact METOC Systems Knowledge Center (MSKC) for initial CASREP reporting and Systems Command notification.
(4) Submit casualty report for naval message release.
(5) Submit follow-up casualty reports as required.

Performance Standard. CASREP and supplemental reports must be completed per applicable references.

ADM-265 6.0 E N/A L

Goal. Maintain and manage the maintenance, management, and material (3M) processes of the MetMF(R).

Requirement. Implement and supervise coordinated requisition, repair, and re-supply of Consolidated Shipboard Allowance List (COSAL) and Table of Basic Allowance (TBA) items within the MALS:

(1) Validate and verify all METOC equipment on accounts by applicable nomenclature and/or national stock numbers (NSN).
(2) Supervise the requisition of replacement equipment/material or documented deficiencies.
(3) Identify and validate future requirements as necessary for addition to the TBA.

Performance Standard. Validation must be adhered to per applicable references.

ADM-266 6.0 E N/A L

Goal. Consolidate customer support requirements.

Requirement. Consolidate METOC support requirements to enhance efficiency, identify deficiencies and provide METOC data and products to satisfy all support requirements:

(1) Identify customer METOC support requirements.
(2) Correlate requirements to METOC support capabilities.
(3) Prioritize and satisfy support requirements.
(4) Incorporate support capabilities in appropriate standard operating/desktop procedures for action by METOC personnel.
(5) Document and forward via the chain of command all requested METOC support requirements not able to be fulfilled.

Performance Standard. Must exhibit ability to identify and the develop procedures to respond support requests per applicable references.

ADM-267 24.0 E N/A L

Goal. Identify and coordinate METOC equipment requirements.

Requirement. Conduct the following tasks:

(1) Identify, submit, and coordinate METOC equipment requirements.
(2) Identify, submit, and coordinate METOC equipment maintenance requirements.
(3) Validate table of allowances.
(4) Establish local concept of operations.
(5) Coordinate and supervise testing of new technologies.

Performance Standard. Requirements must meet standards set forth by applicable orders and directives.

ADM-268 2.0 E N/A L/S

Goal. Facilitate forward area limited observation program (FALOP) procedures.

Requirement. Given a request for information (RFI), respond with requested support products. Complete the following:

(1) Record observational data requested.
(2) Encode observational data requested.
(3) Disseminate observational data requested.

Performance Standard. Encode, record and disseminate METOC observation data using applicable FALOP procedures.

233. CORE SKILL ADVANCED TRAINING

1. METOC PLANNING AND COORDINATION (MPC)

a. Purpose. Demonstrate expertise in the ability to attain and maintain MPC for mission specific support.

b. General

(1) METOC Officers must obtain MFS qualification prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall adept at planning and coordinating all facets of METOC support to the MAGTF.

c. Event Training. (3 Events, 35.0 Hours).

MPC-300 6.0 E N/A S/L

Goal. Support Staff Planning.

Requirement. Provide commanders and staff with METOC specific operational impacts for planning considerations:

(1) Conduct climatological study.

(2) Assess impacts on friendly and enemy operations.
(3) Integrate the METOC impact assessment with the commander's stated mission, IPB and COA development.
(4) Continue to support the commander's COA.

Performance Standard. Complete above listed tasks per applicable references.

MPC-301 24.0 E N/A L

Goal. Produce products to support planning and execution of joint operations and missions.

Requirement. Produce mission specific impact assessments for listed joint missions. Exhibit a comprehensive knowledge of METOC element impacts on major weapon and support categories and missions:

(1) Humanitarian aid missions.
(2) Deep strike missions.
(3) Force on force missions.
(4) Over the horizon missions.
(5) Counterinsurgency missions.
(6) Weaponry.
    (a) Weapons of mass destruction.
    (b) Laser guided munitions.
    (c) Infrared guided munitions.
    (d) Visual guided munitions.
    (e) GPS guided munitions.
(7) Communications.
    (a) Satellite.
    (b) UHF/VHF.
(8) Trafficability.
(9) MEU(SOC).

Performance Standard. Complete briefing with 3 hours of receipt of RFI. Content and format be according to applicable references and guidance.

Prerequisite. Applicable portion of MCWP 3-35.7.

MPC-302 5.0 E N/A L

Goal. Establish and maintain liaison with other service counterparts.

Requirement. Maintain interoperability with other services, liaison with other service counterparts to assist one another in the accomplishment of METOC functions:

(1) Monitor other services' METOC programs and establish liaison with other service counterparts through official correspondence.
(2) Identify relevant METOC programs to include coordination of research and development efforts, to avoid duplication and ensure commonality in the improvement of METOC capabilities.
(3) Implement programs identified for Marine Corps use.

Performance Standard. Complete above listed tasks per applicable references.

2. ADMINISTRATION (ADM)

a. Purpose. To administer METOC personnel and programs.

b. General

(1) METOC Officers must obtain MFS qualification prior to commencing this stage of training.

(2) Upon completion of this stage of training, METOC Officers shall be adept in the proper administrative functions necessary to support MAGTF Operations.

c. Event Training. (10 Events, 182.0 Hours).

ADM-310 24.0 E N/A L

Goal. Develop METOC Standard Operating and Desktop Procedures.

Requirement. Standard Operating Procedures (SOP) and/or Desktop Procedures must outline and specifically address local METOC procedures. Must conform to METOC doctrine and policies that govern Marine Corps practices and requirements:

(1) Review existing or previous SOPs and local directives.
(2) Assess meteorological and oceanographic support requirements.
(3) Assess locally imposed manpower, fiscal, facility constraints.
(4) Document SOPs.
(5) Submit SOP to the Commanding Officer for approval and signature.

Performance Standard. Complete above listed tasks per applicable references.

ADM-311 24.0 E N/A L

Goal. Manage METOC unit personnel.

Requirement. Manage the following personnel functions:

(1) Manage METOC personnel readiness.
(2) Identify manpower requirements and shortfalls through official communications.
(3) Coordinate task organized personnel requirements.
(4) Conduct T/O reviews for both the supporting establishment and MARFORs.

Performance Standard. Complete above listed tasks per applicable references.

ADM-312 6.0 E N/A L

Goal. Establish and oversee qualification and designation program for METOC personnel.

Requirement

(1) Select qualified board evaluators.
(2) Task individual to prepare a forecast or to take observations (surface, surf, upper-air).
(3) Question individual on reasoning and logic concerning their forecast or observations.
(4) Review recommendations of all evaluators.
(5) Make certification recommendation to signing authority.
(6) Prepare and forward appropriate certification certificate for successful forecasters/observers to the signing authority.

Performance Standard. Complete above listed tasks per applicable references.

ADM-313 24.0 E N/A L

Goal. Establish and maintain a METOC security program.

Requirement. Establish and maintain security program that safeguards communications security (COMSEC) equipment and classified material based on the commander's guidance:

(1) Ensure METOC Marines have required clearance from Security Manager, commensurate with billet.
(2) Maintain access letters to local secured spaces.
(3) Maintain copy of letter granting access until no longer required per current directives.
(4) Maintain and revise as necessary, local security SOP.
(5) Request, maintain, and/or update as necessary, a physical security evaluation (PSE) from the authority.
(6) Ensure personnel receive all security-training requirements directed by the references.
(7) Establish and maintain an emergency action plan (EAP).

Performance Standard. Complete above listed tasks per applicable references.

ADM-314 24.0 E N/A L

Goal. Identify METOC doctrinal, equipment or training deficiencies.

Requirement. Develop a Universal Needs Statement (UNS) identifying METOC specific doctrinal, equipment or training deficiencies:

(1) Identify and document support requirements not covered by doctrine.
(2) Develop UNS to satisfy deficiency.
(3) Submit UNS to higher headquarters through the chain of command.

Performance Standard. UNS must be completed per applicable references.

ADM-315 56.0 E N/A L

Goal. Identify and submit fiscal requirements.

Requirement. Identify annual projections and mid-year deficiencies. Submit locally required reports in support of METOC equipment and operational training requirements:

(1) Identify annual operational fiscal requirements.
(2) Estimate annual costs for fiscal requirements.
(3) Prepare annual budget submission and mid-year review deficiencies.
(4) Submit annual and review mid-year review budgets to the appropriate fund administrator.
(5) Monitor and review budgeting accounts.
(6) Identify and submit budget shortfalls.

Performance Standard. Complete above listed tasks per applicable references.

ADM-316 4.0 E N/A L

Goal. Provide information for Base Engineering Site Evaluation Plan (BESEP) equipment studies.

Requirement. Provide specific information for the completion of the equipment installation BESEP:

(1) Identify future equipment installation requirements.
(2) Assist S-4/Facilities Officer/ROICC in identifying location equipment installation.
(3) Review draft BESEP.
(4) Provide additional information as required in development of the BESEP.
(5) Notify BESEP Engineering Agent when identified plans/facilities change.

Performance Standard. Must be in accordance with applicable orders and directives.

ADM-317 1.0 E N/A L

Goal. Establish and conduct Tower Visibility certification procedures for Air Traffic Control (ATC) personnel.

Requirement. Establish a localized training program to certify ATC personnel as Tower Visibility Observers:

(1) Maintain current versions of all training materials.
(2) Obtain results of tower visibility exams.

(3) Prepare certification certificate for the appropriate certifying authority signature.
(4) Return signed certificates to ATC Officer.
(5) Maintain copies of all test results and signed certificates.
(6) Maintain a roster of Tower Visibility certified ATC personnel.

Performance Standard. Complete the above listed tasks per applicable references.

ADM-318 3.0 E N/A L

Goal. Establish a METOC training program to satisfy MAGTF METOC support requirements.

Requirement. Establish a METOC training program to satisfy MAGTF component METOC support requirements:

(1) Determine MAGTF METOC support requirements.
(2) Develop a comprehensive training plan.
(3) Implement the training plan, to include deployment of personnel and assets.
(4) Evaluate effectiveness of training plan and revise accordingly.

Performance Standard. Complete the above listed tasks per applicable references.

ADM-319 16.0 E N/A L

Goal. Conduct and evaluate pre-deployment screenings and inspections.

Requirement. Utilize the MWSG MCCRES to ensure section deployment readiness and conduct. Evaluate and determine whether the METOC unit is capable of its mission by providing required services in support of the MAGTF:

(1) Conduct and evaluate, using mission performance standards (MPS), the capability to perform all mission support functions using the MWSG MCCRES checklist.
(2) Assign grade (mission capable or non-mission capable).
(3) Utilize inspection results and findings to correct deficiencies.

Performance Standard. Complete the above listed tasks per applicable references.

234. CORE PLUS TRAINING

1. ADMINISTRATION (ADM)

a. Purpose. Demonstrate mastery in the ADM of METOC personnel and programs.

b. General

(1) METOC Officers must complete 300-level ADM training prior to commencing the 400 level ADM stage.

(2) Upon completion of this stage of training, METOC Officers shall be adept in the proper administrative functions necessary to support MAGTF operations.

c. Event Training. (2 Events, 48.0 Hours).

ADM-400	18.0	E	N/A	L

Goal. Conduct a METOC Staff Study for each new DOD weapon system.

Requirement. Given a staff study objective and availability of required resources, submit a finalized conclusion or recommendation to a staff study:

(1) Evaluate objectives of an assigned staff study.
(2) Research applicable resources of information.
(3) Compile data necessary to satisfy objectives of the assigned study.

Performance Standard. Complete above listed tasks per applicable references.

2. METOC PLANNING AND COORDINATION (MPC)

a. Purpose. Demonstrate expertise in ability to attain and maintain MPC for mission specific support.

b. General

(1) METOC Officers must complete the 300-level MPC training prior to commencing the 400-level MPC stage.

(2) Upon completion of this stage of training, METOC Officers shall adept at planning and coordinating all facets of METOC support to the MAGTF.

c. Event Training. (1 Event, 18.0 Hours).

MPC-410	24.0	E	N/A	L

Goal. Perform duties as MARFOR Staff METOC Officer.

Requirement. Coordinate METOC effort to support the MAGTF AO as a MARFOR METOC Officer for an operation or contingency:

(1) Identify MARFOR METOC requirements.
(2) Identify and organize staff.
(3) Develop Annex H and provide input to other annexes of the Operational Order (OPORD)/OPLAN.
(4) Maintain liaison with JMO and component SMOs.
(5) Supervise and manage MARFOR METOC assets.

Performance Standard. Complete above listed tasks per applicable references.

MPC-411 24.0 E N/A L

Goal. Perform duties as Joint/Combined METOC Officer.

Requirement. Coordinate METOC effort to support the CJTF's AO when assigned as Joint METOC Officer (JMO) for an operation or contingency:

(1) Identify theater METOC requirements.
(2) Identify and organize staff.
(3) Develop Annex H to OPORD/OPLAN/CONPLAN.
(4) Identify JMFU location, staff and operational requirements.
(5) Maintain liaison with combatant commander SMO and component SMOs.
(6) Supervise and manage theater METOC assets.

Performance Standard. Complete above listed tasks per applicable references.

240. INSTRUCTOR QUALIFICATION TRAINING

1. WEAPONS TACTICS INSTRUCTOR (WTI)

a. Purpose. This stage of the training prepares personnel to become instructors of MAGTF weapons and tactics.

b. General

(1) Administrative Notes. Training shall be conducted by MAWTS-1 at MCAS Yuma, AZ.

(2) Stage End Performance. Upon completion of this stage of training, the METOC officer shall be eligible for the 6877 MOS. Completion of WTI-600 event required for qualification tracking.

d. Academic Training. Academic training events are graded and tracked at the administering unit. Supplemental training events and training packages are highly encouraged.

e. Event Training. (3 Events, 487.0 Hours).

WTI-500 480.0 E N/A L

Goal. WTI training.

Requirement. Complete WTI Course.

Performance Standard. Successfully complete WTI Course and be awarded the 6877 MOS.

Prerequisite. CWO2, 18 months MARFOR experience, and a corresponding MEF level exercise.

External Syllabus Support. MAWTS–1 syllabus.

WTI-501	3.0	E	N/A	L

Goal. Provide Marine aviation weapon and tactics instruction.

Requirement. Train METOC personnel on capabilities and environmental impacts on Marine aviation functions, weapons, platforms, radars, and jammers and the capability of each:

(1) Prepare tailored periods of instruction based upon WTI curriculum.
(2) Present period of instruction on WTI curriculum.

Performance Standard. Must be in accordance with applicable orders and directives.

Prerequisite. WTI-500 and WTI-600.

External Syllabus Support. MAWTS-1 Academic Support Package.

WTI-502	4.0	E	N/A	L

Goal. Establish and conduct a Weapons and Tactics Training Program (WTTP).

Requirement. Establish a professional Aviation WTTP that includes both individual and collective training. Training shall emphasize integration with other aviation units and supporting arms to support the scheme of maneuver:

(1) Maintain relevant knowledge concerning the threat, threat tactics and counter tactics.
(2) Prepare tailored periods of instruction based upon WTI training curriculum.
(3) Present period of instruction.
(4) Within 30 days of deployments, operations and major exercises, submit appropriate information including post exercise/deployment reports and MCLLS.

Performance Standard. Must be in accordance with applicable orders and directives.

Prerequisite. WTI-500, WTI-501 and WTI-600.

External Syllabus Support. MAWTS-1 Academic Support Package.

250. REQUIREMENTS, QUALIFICATIONS AND DESIGNATIONS

1. MAGTF FORECAST SUPPORT (MFS) QUALIFICATION

a. Purpose. To provide tracking codes for events required for the MFS qualification.

b. General. Completion of this event will not result in an increase in CRP. The code is used for tracking of the MFS qualification.

c. Event Training. (1 event).

MFS-600	N/A	E	N/A	L

Goal. Tracking code for MFS Qualification.

Requirement. Complete 200 phase of training.

Prerequisite. 6842 syllabus.

2. WEAPONS TACTICS INSTRUCTOR (WTI) DESIGNATION

a. Purpose. To provide a tracking code for the WTI designation.

b. General. Completion of this event will not result in an increase in CRP. The code is used for tracking of the WTI designation.

c. Event Training. (1 event).

WTI-601	N/A	E	N/A	L

Goal. Tracking code for Weapons and Tactics Instructor.

Requirement. To ensure WTI course completion is obtained.

Performance Standard. Successful completion of WTI course.

Prerequisite. Completion the WTI course and the 6877 MOS.

270. EVENT CRP/HOURS/REFRESH BREAKDOWN. Tables 2-12 through 2-16 provide listings of the events (stage and code), hours, refresh interval and CRP for each stage. A Core Skill Introduction table is not applicable to METOC Officers (para. 231).

Table 2-12. -- Core Skill Basic Events.

STAGE	CODE	HRS	INTERVAL	CRP
AMS	200	2.0	N/A	.50
AMS	201	1.0	N/A	.25
AMS	202	0.5	N/A	.50
AMS	203	2.0	N/A	.25
AMS	204	10.0	365	.50
MPB	210	8.0	N/A	.25
MPB	211	6.0	N/A	.50
MPB	212	3.0	N/A	.25
MPB	213	40.0	N/A	.50
MPB	214	3.0	N/A	.25
MPB	215	24.0	N/A	.25
MDR	220	6.0	N/A	1.0
MDR	221	6.0	N/A	1.0
MIA	230	8.0	N/A	.75
MIA	231	3.0	365	.50
MIA	232	3.0	N/A	.25
MIA	233	3.0	N/A	.25
MIA	234	3.0	N/A	.25
MIA	235	3.0	N/A	.25
MIA	236	3.0	N/A	.25
MIA	237	3.0	N/A	.25
MIA	238	3.0	N/A	.25
MFS	240	6.0	365	1.0
MFS	241	12.0	N/A	.50
MFS	242	6.0	N/A	.50
MPC	250	6.0	N/A	.15
MPC	251	16.0	365	.25
MPC	252	48.0	N/A	.25
MPC	253	16.0	365	.15
MPC	254	32.0	N/A	.25
MPC	255	24.0	N/A	.20
MPC	256	51.0	N/A	.25
MPC	257	24.0	N/A	.25
MPC	258	24.0	N/A	.25
ADM	260	2.0	365	.25
ADM	261	1.0	365	.25
ADM	262	1.0	N/A	.25
ADM	263	3.0	N/A	.25
ADM	264	2.0	N/A	.25
ADM	265	6.0	N/A	.25
ADM	266	6.0	N/A	.25

Table 2-13. -- Core Skill Basic Events – Continued.

STAGE	CODE	HRS	INTERVAL	CRP
ADM	267	24.0	N/A	.25
ADM	268	2.0	N/A	.25
	TOTALS:	455.0		15.0

Table 2-14. -- Core Skill Advanced Events.

STAGE	CODE	HRS	INTERVAL	CRP
MPC	300	6.0	N/A	2.5
MPC	301	24.0	N/A	5.0
MPC	302	5.0	N/A	2.5
ADM	310	24.0	N/A	1.0
ADM	311	24.0	N/A	1.0
ADM	312	6.0	N/A	1.0
ADM	313	24.0	N/A	1.0
ADM	314	24.0	N/A	1.0
ADM	315	56.0	N/A	1.0
ADM	316	4.0	N/A	1.0
ADM	317	1.0	N/A	1.0
ADM	318	3.0	N/A	1.0
ADM	319	16.0	N/A	1.0
	TOTALS:	217.0		20.0

Table 2-15. **--** Core Plus Events.

STAGE	CODE	HRS	INTERVAL	CRP
ADM	400	18.0	N/A	2.0
MPC	410	24.0	N/A	2.0
MPC	411	24.0	N/A	1.0
	TOTALS:	66.0		5.0

Table 2-16. –- Instructor Training Events.

STAGE	CODE	HRS	INTERVAL	CRP
WTI	500	480.0	N/A	0.0
WTI	501	3.0	N/A	0.0
WTI	502	4.0	N/A	0.0
	TOTALS:	487.0		0.0

Table 2-17. –- Requirements, Qualification and Designation Events.

STAGE	CODE	HRS	INTERVAL	CRP
MFS	600	N/A	N/A	0.0
WTI	601	N/A	N/A	0.0
	TOTALS:	N/A		0.0

1. Event Chaining. Currently no chaining exists for the METOC officer syllabus.

271. T&R EVENT CONVERSION TABLE

1. Purpose. To provide a reference to facilitate the conversion of the former T&R event codes to the new event codes. Table 2-18 the conversion of the previous chapter three events to the new event stages and codes in this Manual.

Table 2-18. – Previous Chapter 3 Event Conversion Table.

OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT
100 LEVEL		**200 LEVEL**		**300 LEVEL**		**400 LEVEL**	
		FAM-200	Deleted	ADM-300	ADM-314	ADM-400	ADM-400
		OPS-201	Deleted	ADM-301	Deleted	OPS-401	MPC-410
		OPS-202	Deleted	ADM-302	ADM-315	OPS-402	MPC-411
		ADM-203	ADM-265	ADM-303	ADM-310	TRN-403	WTI-501
		ADM-204	ADM-266	ADM-305	ADM-316	TRN-404	WTI-502
			AMS-200	ADM-306	MPC-302		
			AMS-201	ADM-307	MPB-212		
			AMS-202	ADM-308	MPC-300		
			AMS-203	OPS-309	Deleted		
			AMS-204	SEC-310	ADM-313		
			MPB-210	TRN-311	ADM-312		
			MPB-211	TRN-312	ADM-317		
			MPB-212	TRN-313	ADM-318		
			MPB-213		MPC-301		
			MPB-214		ADM-311		
			MPB-215		ADM-319		
			MDR-220				
			MDR-221				
			MIA-230				
			MIA-231				
			MIA-232				
			MIA-233				
			MIA-234				
			MIA-235				
			MIA-236				
			MIA-237				
			MIA-238				
			MFS-240				
			MFS-241				
			MFS-242				
			MPC-250				
			MPC-251				
			MPC-252				
			MPC-253				
			MPC-254				
			MPC-255				
			MPC-256				
			MPC-257				
			MPC-258				
			ADM-260				
			ADM-261				
			ADM-262				
			ADM-263				

Table 2-19. – Previous Chapter 3 Event Conversion Table – Continued.

OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT	OLD EVENT	NEW EVENT
100 LEVEL		**200 LEVEL**		**300 LEVEL**		**400 LEVEL**	
			ADM-264				
			ADM-265				
			ADM-266				
			ADM-267				
			ADM-268				

500 LEVEL		**600 LEVEL**	
OLD EVENT	**NEW EVENT**	**OLD EVENT**	**NEW EVENT**
WTI-500	WTI-500	WTI-600	WTI-601
			MFS-600

APPENDIX A

T&R CHAPTER ONE EVENT LISTING

CORE SKILL INTRODUCTION TRAINING EVENTS (100 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
FAM-100	METOC T&R Manual Familiarization.	1-17
FAM-101	Introduce basic computer operations.	1-17
FAM-102	Meteorological satellite familiarization.	1-17
FAM-103	Advanced meteorological familiarization.	1-18
FAM-104	Meteorological chart analysis familiarization.	1-18
FAM-105	Meteorological equipment familiarization.	1-18
FAM-106	Advanced computer analysis familiarization.	1-19
FAM-107	Doppler radar fundamentals and interpretation familiarization.	1-19
FAM-108	Routine METOC product processing familiarization.	1-19
FAM-109	Weather feature prognosis technique familiarization.	1-20
FAM-110	Forecasting techniques and procedures familiarization.	1-20
FAM-111	Meteorological theories and dynamics application familiarization.	1-20

CORE SKILL BASIC TRAINING EVENTS (200 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
MSO-200	Master fundamentals of surface observations.	1-21
MSO-201	Perform ceiling balloon operations.	1-21
MSO-202	Compute meteorological values.	1-21
MSO-203	Take, record and disseminate a surface meteorological observation.	1-22
UAS-210	Introduction to upper air observational equipment and procedures.	1-23
UAS-211	Decode upper air messages.	1-23
UAS-212	Setup a theodolite.	1-24
UAS-213	Conduct an upper-atmospheric sounding.	1-24
UAS-214	Plot and analyze a Skew-T Log-P diagram.	1-24
UAS-215	Conduct a PIBAL observation.	1-25
OHS-220	Certify proficiency at calculating tidal data.	1-26
OHS-221	Introduce oceanographic and littoral warfare products.	1-26
AMS-225	Comprehend atmospheric physics.	1-26
AMS-226	Comprehend atmospheric dynamics.	1-27
AMS-227	Comprehend atmospheric fundamentals.	1-27
AMS-228	Comprehend Global and Regional METOC models.	1-28
AMS-229	Initialize and verify meteorological model output.	1-28
AMS-230	Graphical METOC product familiarization.	1-29
AMS-231	Forecast synoptic scale systems.	1-29
AMS-232	Forecast severe weather.	1-29
AMS-233	Forecast local area (mesoscale/microscale) meteorological elements and phenomenon.	1-30
AMS-234	Forecast tropical cyclone development and movement.	1-30
AMS-235	Produce a limited data forecast.	1-31
MDR-240	Perform basic meteorological radar system(s) operations.	1-31
MDR-241	Perform basic radar imagery interpretation.	1-32
MDR-242	Perform advanced radar imagery interpretation.	1-32
MSAT-245	Analyze meteorological features on satellite imagery.	1-33
MSAT-246	Perform advanced operations on available satellite system.	1-33

CORE SKILL BASIC TRAINING EVENTS (200 LEVEL)- CONTINUED		
EVENT	**GOALS**	**PAGE NUMBER**
MSAT-247	Analyze and interpret satellite imagery.	1-33
MCS-250	Calculate astronomical data.	1-34
MCS-251	Generate astronomical and climatological data.	1-34
WWA-255	Weather warning and advisory familiarization.	1-35
WWA-256	State weather warning and advisory criterion.	1-35
WWA-257	Be proficient in issuing weather warnings and advisories.	1-36
WWA-258	Disseminate weather warnings.	1-36
WWA-259	Display meteorological weather warnings/advisories.	1-36
MDA-260	Analyze and interpret a thickness chart.	1-37
MDA-261	Analyze and interpret a vorticity chart.	1-37
MDA-262	Analyze and interpret upper atmospheric weather charts.	1-37
MDA-263	Analyze and interpret a surface pressure chart.	1-38
MDA-264	Develop synoptic scale forecast using prognosis techniques.	1-38
MDA-265	Introduce elements forecasted from a plotted Skew-T Log P Diagram.	1-39
MDA-266	Analyze atmospheric conditions from the SKEW-T Log P Diagram.	1-39
MDA-267	Conduct a streamline analysis.	1-40
MPB-270	Brief METOC features from (re)analyzed products.	1-40
MPB-271	Brief synoptic chart set.	1-41
MFS-275	Encode and disseminate pilot reports (PIREPs).	1-41
MFS-276	Produce Terminal Aerodrome Forecast (TAF).	1-42
MFS-277	Generate Optimum Path Aircraft Routing System (OPARS) products.	1-42
MFS-278	Introduce flight weather products.	1-42

CORE SKILL ADVANCE TRAINING EVENTS (300 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
OHS-300	Conduct surf observations.	1-43
OHS-301	Demonstrate knowledge of surf forecasting.	1-43
OHS-302	Compute Modified Surf Index (MSI).	1-44
OHS-303	Create surf forecast.	1-44
MDR-310	Perform advanced operations on meteorological radar.	1-45
MDR-311	Conduct management operations for the meteorological radar system.	1-45
MSAT-320	Perform advanced operations on the tactical satellite system(s).	1-46
MSC-330	Generate a climatology brief.	1-47
MPB-340	Conduct METOC training briefs.	1-48
MPB-341	Conduct an Aviation Strike Brief.	1-48
MPB-342	Conduct a Search And Rescue (SAR) brief.	1-49
MPB-343	Conduct a climatology brief.	1-49
MPB-344	Familiarization with environmental impact briefings and reporting.	1-49
MFS-345	Demonstrate proficiency of flight weather briefing(s).	1-50
MFS-346	Produce flight weather packets.	1-51
MFS-347	Produce mission specific meteorological products that support MAGTF operations.	1-51
MPC-350	Embarkation of the MetMF(R).	1-51
MPC-351	Demonstrate proficiency with deployment requirements and procedures.	1-52

APPENDIX A

T&R CHAPTER ONE EVENT LISTING

CORE SKILL ADVANCE TRAINING EVENTS (300 LEVEL)- CONTINUED		
EVENT	**GOALS**	**PAGE NUMBER**
MPC-352	Be familiar with METOC logistics and external support requirements.	1-52
MPC-353	Introduce Defense Messaging System (DMS).	1-52
MIA-360	Be familiar with products and sources for assessment of METOC impacts on MAGTF Operations.	1-53
MIA-361	Oceanographic forecasting and impact assessment familiarization.	1-53
MIA-362	Conduct a mission analysis.	1-54
MIA-363	Demonstrate proficiency on METOC software applications.	1-54
MIA-364	Assess METOC impacts on aviation operations.	1-54
MIA-365	Assess METOC impacts on ground operations.	1-55
MIA-366	Assess METOC impacts on intelligence operations.	1-55
MIA-367	Assess METOC impacts on logistical operations.	1-56
MIA-368	Produce mission specific products.	1-56

CORE SKILL PLUS TRAINING EVENTS (400 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
MPB-400	Conduct a pre-deployment brief.	1-57
MPB-401	Conduct an amphibious warfare brief.	1-57
MDR-410	Manage meteorological radar operations.	1-58
MPC-420	Introduce joint operation METOC functions.	1-59
MPC-421	Submit input to annexes of operational orders.	1-59
MPC-422	Introduce concepts to METOC support issues.	1-60
MPC-423	Manage logistical support program.	1-60
MPC-424	Conduct deployment requirements and procedures.	1-60
MPC-425	Conduct METOC support operations for MAGTF.	1-60
MIA-430	Produce products to support planning and execution of joint operations and missions.	1-61
MIA-431	Assess METOC impacts on Chemical, Biological, Radiological and nuclear (CBRN) defensive operations.	1-62
MIA-432	Assess METOC impacts on communication operations.	1-62
MIA-433	Assess METOC impacts to amphibious operations.	1-62

METOC INSTRUCTOR TRAINING EVENTS (500 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
FSI-500	Attend BIC.	1-64
FSI-501	Complete instructor certification process.	1-64
FSI-502	Complete annual re-qualification.	1-64
FSI-503	Complete supplemental instructor training.	1-64
FSI-504	Complete curriculum development program.	1-65
FSI-505	Achieve Master Instructor rating.	1-65

METOC INSTRUCTOR TRAINING EVENTS (500 LEVEL)- CONTINUED		
EVENT	**GOALS**	**PAGE NUMBER**
MAI-510	METOC subjects certification.	1-66
MAI-511	Conduct techniques of military instruction (TMI) for instructor/mentorship designation.	1-66

REQUIREMENTS, QUALIFICATIONS, & DESIGNATIONS (600 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
SEC-600	Track secret clearances.	1-67
SEC-601	Track top-secret clearances.	1-67
ACA-602	Complete AG module 1.	1-67
ACA-603	Complete AG module 2.	1-67
ACA-604	Complete Principles of Oceanography Course.	1-67
ACA-605	Complete AG module 3.	1-67
ACA-606	Complete AG module 4.	1-68
ACA-607	Complete AG module 5.	1-68
ACA-608	Complete Introduction To Forecasting (ITF) Course.	1-68
MDN-620	Equipment Casualty reporting familiarization.	1-68
MDN-621	MAGTF operations familiarization.	1-69
MDN-622	METOC support architecture comprehension.	1-69
MDN-623	Comprehend local area policies and procedures.	1-69
MDN-624	To demonstrate comprehension of regulations, orders and instructions governing classified materials and software.	1-70
MDN-625	Conduct tower visibility observer training.	1-70
MDN-626	METOC mission comprehension.	1-70
MDN-627	Comprehend orders and directives governing METOC support.	1-71
GME-630	Operate garrison METOC equipment to provide METOC support to base operations.	1-71
GME-631	Configure Lightning Position And Tracking System (LPATS).	1-72
GME-632	Operate garrison handheld meteorological devices.	1-72
GME-633	Operate the Automated Surface Observing System (ASOS) system.	1-72
GME-634	Operate the lightning detection equipment operations (LPATS).	1-73
TME-640	Conduct logistic support functions.	1-73
TME-641	Perform system management functions of applicable subsystems inherent to the MetMF(R).	1-74
TME-642	Deploy the MetMF(R).	1-75
TME-643	Setup and conduct operational checks of each subsystem inherent to the METMF(R).	1-75
TME-644	Operate the METMF(R).	1-76
TME-645	Operate the NITES IV.	1-77
MSO-650	Qualify as a surface meteorological observer.	1-78
UAS-651	Qualify as capable of sensing upper-atmospheric elements.	1-78
OHS-652	Qualify in Oceanography-Hydrological Services.	1-79
FSQ-653	Qualify in Forecast Support.	1-79
MFS-654	Qualify in providing forecast support to the MAGTF.	1-79

APPENDIX A

T&R CHAPTER ONE EVENT LISTING

REQUIREMENTS, QUALIFICATIONS, & DESIGNATIONS (600 LEVEL)- CONTINUED		
EVENT	**GOALS**	**PAGE NUMBER**
MDR-655	Qualify in operation and product interpretation of meteorological radar(s).	1-79
OFS-656	Qualify in Oceanography-Hydrological Forecast support.	1-79
MIA-657	Qualify in the assessment of METOC elements and conditions that relates to mission specific support requirements.	1-80
FSI-658	Qualify as a formal schools instructor.	1-80
AMA-660	Attain Apprentice METOC Analyst (AMA) designation.	1-81
JMA-661	Complete designation checklist for a Journeyman METOC Analyst (JMA).	1-81
JMA-662	Attain Journeyman METOC Analyst (JMA) designation.	1-81
MMA-663	Attain Master METOC Analyst (MMA) designation.	1-82
MAI-664	Attain METOC Analyst Instructor (MAI) designation.	1-82

APPENDIX B

T&R CHAPTER TWO EVENT LISTING

CORE SKILL BASIC TRAINING EVENTS (200 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
AMS-200	Forecast tropical cyclone and development.	2-15
AMS-201	Produce a limited data forecast.	2-16
AMS-202	Forecast severe weather.	2-16
AMS-203	Comprehend Global and Regional METOC models.	2-16
AMS-204	Develop synoptic scale forecast using prognosis techniques.	2-16
MPB-210	Conduct METOC training briefs.	2-17
MPB-211	Conduct pre-deployment brief.	2-17
MPB-212	Brief METOC capabilities.	2-18
MPB-213	Conduct a climatology brief.	2-18
MPB-214	Conduct an aviation strike brief.	2-19
MPB-215	Conduct an amphibious warfare brief.	2-19
MDR-220	Manage meteorological radar operations.	2-20
MDR-221	Manage meteorological radar system(s) management.	2-20
MIA-230	Conduct a mission analysis.	2-21
MIA-231	Produce mission specific products.	2-22
MIA-232	Assess METOC impacts to amphibious operations.	2-22
MIA-233	Assess METOC impacts on aviation operations.	2-23
MIA-234	Assess METOC impacts on ground operations.	2-23
MIA-235	Assess METOC impacts on intelligence operations.	2-24
MIA-236	Assess METOC impacts on communications operations.	2-24
MIA-237	Assess METOC impacts on chemical, biological, radiological and nuclear (CBRN) defensive operations.	2-25
MIA-238	Assess METOC impacts on logistical operations.	2-25
MFS-240	Produce mission specific meteorological products that support MAGTF operations.	2-26
MFS-241	Generate a climatology brief.	2-26
MFS-242	Demonstrate mastery of oceanographic and littoral warfare products.	2-27
MPC-250	Introduce METOC logistical and external support requirements.	2-27
MPC-251	Embark the METMF(R).	2-28
MPC-252	Perform system management functions of applicable subsystems inherent to the METMF(R).	2-28
MPC-253	Master the Defense Messaging System (DMS).	2-29
MPC-254	Conduct deployment requirements and procedures.	2-30
MPC-255	Submit METOC reports.	2-30
MPC-256	Submit input to annex of operational orders.	2-30
MPC-257	Conduct METOC support operations for the MAGTF.	2-31
MPC-258	Introduce joint operation METOC functions.	2-31
ADM-260	Describe METOC support architecture.	2-31
ADM-261	Familiarization of regulations, orders and instructions governing classified materials and software.	2-32
ADM-262	Utilize orders and directives governing METOC support.	2-32
ADM-263	Manage logistical support program.	2-32
ADM-264	Promulgate equipment casualty reporting procedures.	2-33

CORE SKILL BASIC TRAINING EVENTS (200 LEVEL)- CONTINUED		
EVENT	**GOALS**	**PAGE NUMBER**
ADM-265	Maintain and manage the maintenance, management and material (3M) processes of the METMF(R).	2-33
ADM-266	Consolidate customer support requirements.	2-33
ADM-267	Identify and coordinate METOC equipment requirements.	2-34
ADM-268	Facilitate the forward area limited observation program (FALOP) procedures.	2-34

CORE SKILL ADVANCE TRAINING EVENTS (300 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
MPC-300	Support staff planning.	2-35
MPC-301	Produce products to support planning and execution of joint operations and missions.	2-35
MPC-302	Establish and maintain liaison with other service counterparts.	2-35
ADM-310	Develop METOC standard operating and desktop procedures.	2-36
ADM-311	Manage METOC Unit personnel.	2-36
ADM-312	Establish and oversee qualification and designation program for METOC personnel.	2-37
ADM-313	Establish and maintain a METOC security program.	2-37
ADM-314	Identify doctrinal, equipment or training deficiencies.	2-37
ADM-315	Identify and submit fiscal requirements.	2-38
ADM-316	Provide information for base engineering site evaluation plan (BESEP) equipment studies.	2-38
ADM-317	Establish and conduct tower visibility certification procedures for Air Traffic Control (ATC) personnel.	2-39
ADM-318	Establish a METOC training program to satisfy MAGTF METOC support requirements.	2-39
ADM-319	Conduct and evaluate pre-deployment screenings and inspections.	2-39

CORE SKILL PLUS TRAINING EVENTS (400 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
ADM-400	Conduct a METOC staff study for each new DoD weapon system.	2-40
MPC-410	Perform duties as MARFOR staff METOC officer.	2-40
ADM-411	Perform duties as Joint/Combined METOC officer.	2-41

METOC INSTRUCTOR TRAINING EVENTS (500 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
WTI-500	WTI training.	2-41
WTI-501	Provide Marine aviation weapons and tactics instruction.	2-42
WTI-502	Establish and conduct weapons and tactics training program (WTTP).	2-42

APPENDIX B

T&R CHAPTER TWO EVENT LISTING

REQUIREMENTS, QUALIFICATIONS, & DESIGNATIONS (600 LEVEL)		
EVENT	**GOALS**	**PAGE NUMBER**
MFS-600	Tracking code for MFS qualification.	2-43
WTI-601	Tracking code for Weapons and Tactics Instructor.	2-43

APPENDIX C

COURSE TABLES

1. Formal Courses. The following courses are available to assist in the completion of the T&R syllabus.

CODE	COURSE TITLE	SPONSOR
F0268B1	Marine Corps Weather Observer Course	CNATTU Keesler, AFB
N61RCB1	Aerographers Mate Advanced For USMC METOC Analyst/Forecast Course (MOAF)	CNATTU Keesler, AFB
F020321	Tropical Weather Analysis and Forecasting	335 TRS Keesler, AFB
F02KBK1	WSR-88D PUP Operator/Manager	335 TRS Keesler, AFB
	Mobile Tactical Training Course	PDDs
E3AIR3S200	Basic Instructors course	81ST TRW Keesler, AFB
O&T J6ADL3C200-024	Objectives and Tests	81ST TRW Keesler, AFB
ISD E6ADL3C200-000	Instructional System Development course	81ST TRW Keesler, AFB
	USN/USMC Security Manager’s course	Assigned Unit S-2/G-2
M02RMG4	The Basic School	MCB Quantico, VA
M14P2A1	Weapons and Tactics Instructor	MCAS Yuma, AZ

2. Computer Based Training

COURSE	T&R ACADEMIC CODE	IDENTIFICATION CODE
A Social Science Perspective on Flood Events	CBT 001	
Buoyancy and CAPE	CBT 002	
Coastally Trapped Wind Reversals	CBT 003	
Cold Air Damming	CBT 004	
Community Hurricane Preparedness	CBT 005	
Definition of the Mesoscale	CBT 006	
Diagnosing and Forecasting Extra-tropical Transition: A Case Exercise on Hurricane Michael	CBT 007	
Dispersion Basics	CBT 008	
Experimental Satellite Derived Tropical Rainfall Potential (TRAP)	CBT 009	
Feature Identification from Environmental Satellites	CBT 010	
Flow Interaction with Topography	CBT 011	
Forecasting Aviation Icing: Icing Type and Severity	CBT 012	
How Mesoscale Models Work	CBT 013	
Hurricane Strike!™	CBT 014	
Hurricanes Canadian Style: Extra-tropical Transition	CBT 015	
Hydrology for the Meteorologist: The Headwater Forecast Process	CBT 016	

(Computer Based Training – Continued.)

COURSE	T&R ACADEMIC CODE	IDENTIFICATION CODE
Icing Assessment Using Soundings and Wind Profiles	CBT 017	
Introduction to Fire Behavior: Influences of Topography, Fuels, and Weather on Fire Ignition and Spread	CBT 018	
Mesoscale Convective Systems: Squall Lines and Bow Echoes	CBT 019	
Predicting Supercell Motion Using Hodograph Techniques	CBT 020	
Principles of Convection I: Buoyancy and CAPE	CBT 021	
Quantitative Precipitation Forecasting Overview	CBT 022	
Radiation Fog	CBT 023	
Remote Sensing Using Satellites	CBT 024	
The Balancing Act of Geostrophic Adjustment	CBT 025	
The MJO Life Cycle	CBT 026	
The Role of the MJO on Oceanic and Atmospheric Variability	CBT 027	
The Use and Misuse of Conditional Symmetric Instability	CBT 028	
Thermally-forced Circulation I: Sea Breezes	CBT 029	
Thermally-forced Circulation II: Mountain/Valley Breezes	CBT 030	
Urban Flooding: It Can Happen in a Flash!	CBT 031	
West Coast Fog	CBT 032	

3. Correspondence Course Training

COURSE	T&R ACADEMIC CODE	IDENTIFICATION CODE
AEROGRAPHER'S MATE 1 AND C		NAVEDTRA 14010
AEROGRAPHER'S MATE MODULE 1 - SURFACE WEATHER OBSERVATIONS	WBA	NAVEDTRA 14269
AEROGRAPHER'S MATE MODULE 2 - MISCELLANEOUS OBSERVATIONS AND CODES	WBB	NAVEDTRA 14270
AEROGRAPHER'S MATE MODULE 3 - ENVIRONMENTAL SATELLITES AND WEATHER RADAR	WBC	NAVEDTRA 14271
AEROGRAPHER'S MATE MODULE 4 - ENVIRONMENTAL COMMUNICATIONS AND ADMINISTRATION	WBD	NAVEDTRA 14272
AEROGRAPHER'S MATE MODULE 5 - BASIC METEOROLOGY	WBE	NAVEDTRA 14312
INTRODUCTION TO METEOROLOGY	WAG	
INTRODUCTION TO FORECASTING	WAH	
PRINCIPLES OF OCEANOGRAPHY	WAJ	
BASIC SURFACE CHART ANALYSIS		METOC 50-1T-0301
ENCODING, DECODING AND PLOTTING THE SYNOPTIC REPORT		METOC 50-1T-0302

(Correspondence Course Training – Continued.)

COURSE	T&R ACADEMIC CODE	IDENTIFICATION CODE
INTRODUCTION TO ELECTRO-OPTICS		METOC 50-1T-0303
TROPICAL SYNOPTIC MODELS		METOC 50-1T-0304
TROPICAL STREAMLINE ANALYSIS		METOC 50-1T-9607
A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 1		METOC 50-1T-9610
A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 2		METOC 50-1T-9610
EVALUATING AND ENCODING BATHYTHERMOGRAPH (BT) DATA		METOC 60-1T-0203

4. Technical Training Publications. Current correspondence courses required for completion of the syllabus.

PUBLICATION	IDENTIFICATION CODE
THE USE OF THE SKEW-T LOG P DIAGRAM IN ANALYSIS AND FORECASTING	AWS/TR-79/006
ATMOSPHERIC REFRACTION	METOC 50-1T-0202
BASIC SURFACE CHART ANALYSIS	METOC 50-1T-0301
ENCODING, DECODING AND PLOTTING THE SYNOPTIC REPORT	METOC 50-1T-0302
INTRODUCTION TO ELECTRO-OPTICS	METOC 50-1T-0303
TROPICAL SYNOPTIC MODELS	METOC 50-1T-0304
TROPICAL STREAMLINE ANALYSIS	METOC 50-1T-9607
A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 1	METOC 50-1T-9610
A WORKBOOK ON TROPICAL CLOUDS AND CLOUD SYSTEMS OBSERVED IN SATELLITE IMAGERY, VOL 2	METOC 50-1T-9610
EVALUATING AND ENCODING BATHYTHERMOGRAPH (BT) DATA	METOC 60-1T-0203
FLEET OCEANOGRAPHIC AND ACOUSTIC REFERENCE MANUAL	RP33
AEROGRAPHER'S MATE SECOND CLASS - VOL 1	NAVEDTRA 10370
AEROGRAPHER'S MATE SECOND CLASS - VOL 2	NAVEDTRA 10371

5. Squadron Level Training

TRAINING TITLE	SPONSOR
Office 2000 Basics	Local ISC
Annual Security Refresher training	Security Manager

6. METOC Unit Training

TRAINING TITLE	SPONSOR
Familiarization with Local Standing Operating Procedures	
Air Force Qualification Training Package	Air Force

APPENDIX D

REFERENCES

1. References

TITLE	IDENTIFICATION CODE
AIR TRAFFIC CONTROLLERS AS TOWER VISIBILITY OBSERVERS	NAVMETOCCOMINST 1500.3
JOINT SURF MANUAL	CNSPINST/CNSLINST 3840.1
JOINT METOC OPERATIONS	CJCSI 3810.01
JOINT OPERATIONAL PLANNING AND EXECUTION SYSTEM (JOPES)	CJCSM 3122.03
JOINT DOCTRINE FOR AMPHIBIOUS OPERATIONS	JP 3-02
JOINT DOCTRINE, TACTICS, TECHNIQUES AND PROCEDURES FOR METOC OPERATIONS	JP 3-59
JOINT METEOROLOGICAL HANDBOOK	JMH
PROCEDURES FOR QUALIFICATION AND CERTIFICATION OF NAVY AND MARINE CORPS AIR UNITED STATES NAVY METEOROLOGICAL AND OCEANOGRAPHIC SUPPORT MANUAL	NAVMETOCCOMINST 3140.1
FLIGHT WEATHER BRIEFING MANUAL	NAVMETOCCOMINST 3140.14
POLICIES CONCERNING THE PROVISION OF METEOROLOGICAL AND OCEANOGRAPHY PRODUCTS AND SERVICES	NAVMETOCCOMINST 3140.17
LOCAL AREA AND AREA OF RESPONSIBILITY FORECASTER'S HANDBOOKS	NAVMETOCCOMINST 3140.2
METEOROLOGICAL AND OCEANOGRAPHIC (METOC) POST-DEPLOYMENT REPORTS	NAVMETOCCOMINST 3140.23
ATMOSPHERIC TURBULENCE AND ICING CRITERIA	NAVMETOCCOMINST 3140.4
FLEET LIAISON PROGRAM	NAVMETOCCOMINST 3140.7
EARTHQUAKE OBSERVATIONAL REPORTING PROGRAM	NAVMETOCCOMINST 3141.1
SURFACE METAR OBSERVATIONS USER'S MANUAL	NAVMETOCCOMINST 3141.2
PROCEDURES GOVERNING PILOT WEATHER REPORTS	NAVMETOCCOMINST 3142.1
TERMINAL AERODROME FORECAST (TAF) CODE	NAVMETOCCOMINST 3143.1
UNITED STATES NAVY MANUAL FOR SHIP'S SURFACE WEATHER OBSERVATIONS	NAVMETOCCOMINST 3144.1
MAINTENANCE AND MATERIAL MANAGEMENT (3M) PROGRAM FOR NAVMETOCCOM ACTIVITIES	NAVMETOCCOMINST 4790.2
GEOPHYSICS FLEET MISSION PROGRAM LIBRARY	NAVMETOCCOMINST 5232.1
MISSION, ORGANIZATION, AND FUNCTIONS OF THE NAVAL METOC COMMUNITY	NAVMETOCCOMINST 5450.9
METEOROLOGICAL EQUIPMENT MANAGEMENT AND PLANNING POLICY	NAVMETOCCOMINST 13950.1
WARNINGS AND CONDITIONS OF READINESS CONCERNING HAZARDOUS OR DESTRUCTIVE WEATHER PHENOMENON	OPNAVINST 3140.24
NATOPS GENERAL FLIGHT AND OPERATING INSTRUCTIONS	OPNAVINST 3710.7
FLEET NUMERICAL METOC OPARS MANUAL	P-3710
FEDERAL METEROLOGICAL HANDBOOK NO.1, SURFACE WEATHER OBSREVATIONS AND REPORTS	FCM-H1-1998
FEDERAL METEROLOGICAL HANDBOOK NO.3 – RAWINSODE AND PIBAL OBSERVATIONS	FCM-H3-1997
FEDERAL METEROLOGICAL HANDBOOK NO.11 – DOPPLER RADAR METEOROLOGICAL OBSERVATION (WSR-88D) PART A – SYSTEM CONCEPTS, RESPONSIBILITIES, AND PROCEDURES	FCM-H11A-2004

(References – Continued.)

TITLE	IDENTIFICATION CODE
FEDERAL METEROLOGICAL HANDBOOK NO.12 – UNITED STATES METEOROLOGICAL CODES AND CODING PRACTICES	FCM-H12-1998
NATIONAL AVIATION WEATHER PROGRAM: STRATEGIC PLAN	FCM-P32-1997
THE NATIONAL SPACE WEATHER PROGRAM: IMPLEMENTATION PLAN	FCM-P31-2000
NATIONAL PLAN FOR TROPICAL CYCLONE RESEARCH	FCM-P25-1997
NATIONAL WINTER STORMS OPERATION PLAN	FCM-P13-2004
NATIONAL SEVERE LOCAL STORMS OPERATION PLAN	FCM-P11-2001
WSR-88D TROPICAL CYCLONE OPERATIONS PLAN	FCM-P12-2004
MARINE CORPS HEAT INJURY PREVENTION PROGRAM	MCO 6200.1
DEPARTMENT OF NAVY PERSONNEL SECURITY PROGRAM (PSP) REGULATION	SECNAVINST 5510.30
DEPARTMENT OF THE NAVY INFORMATION SECURITY PROGRAM (ISP) REGULATION	SECNAVINST 5510.36
USMC INFORMATION ASSURANCE PROGRAM (MCIAP)	MCO 5239.2
USMC INFORMATION AND PERSONNEL SECURITY PROGRAM MANUAL	MCO P5510.18
MARINE CORP PHYSICAL SECURITY PROGRAM MANUAL	MCO 5530.14
NAVY AND MARINE CORPS AWARDS MANUAL	SECNAVINST 1650.1
DON FILE MAINTENANCE PROCEDURES AND STANDARD SUBJECT IDENTIFICATION CODES (SSIC)	SECNAVINST 5210.11
NAVY AND MARINE CORPS RECORDS DISPOSITION MANUAL	SECNAVINST 5212.5
DON CORRESPONDENCE MANUAL	SECNAVINST 5216.5
DON POLICY FOR CONTENT OF PUBLICLY ACCESSIBLE WORLD WIDE WEB SITES	SECNAVINST 5720.47
MARINE CORPS PUBLICATIONS LIBRARY MANAGEMENT SYSTEM FIELD USER'S GUIDE	UM-PLMS
MARINE CORPS UNIFORM REGULATIONS	MCO P1020.34
MARINE CORPS INDIVIDUAL RECORDS ADMINISTRATION MANUAL (IRAM)	MCO P1070.12
MILITARY OCCUPATIONAL SPECIALTIES (MOS) MANUAL	MCO P1200.7
MARINE CORPS PROMOTION MANUAL, VOLUME 2 ENLISTED PROMOTIONS	MCO P1400.32
PERFORMANCE EVALUATION SYSTEM (PES)	MCO P1610.7
ADMINISTRATIVE AND ISSUE PROCEDURES FOR DECORATIONS, MEDALS, AND AWARDS	MCO 1650.19
FAMILY CARE PLANS	MCO 1740.13
OPERATIONAL RISK MANAGEMENT (ORM)	MCO 3500.27
MARINE CORPS COMBAT READINESS AND EVALUATION SYSTEM (MCCRES)	MCO 3501.1
MCCRES VOL XII, MWSG UNITS	MCO 3501.17
MARINE CORPS EXPEDITIONARY FORCE DEVELOPMENT SYSTEM	MCO P3900.15
CONSUMER LEVEL SUPPLY POLICY MANUAL	MCO P4400.150
DOD SUPPLY MANAGEMENT REFERENCE BOOK	MCO 4400.163
STORAGE AND HANDLING OF HAZARDOUS MATERIALS	MCO 4450.12
MARINE CORPS INSPECTIONS	MCO 5040.6
MARINE CORPS SAFETY PROGRAM	MCO 5100.29
MARINE CORPS OCCUPATIONAL SAFETY AND HEALTH PROGRAM MANUAL	MCO P5100.8

(References – Continued.)

TITLE	IDENTIFICATION CODE
USMC INTERNAL MANAGEMENT CONTROL PROGRAM	MCO 5200.24
RECORDS MANAGEMENT PROGRAM FOR THE MARINE CORPS	MCO 5210.11
MARINE AIRCRAFT GROUP (MAG) FISCAL HANDBOOK	MCO P7300.19
STORAGE AND HANDLING OF COMPRESSED GASES AND LIQUIDS IN CYLINDERS, AND OF CYLINDERS	MCO 10330.2
USER'S GUIDE TO COUNSELING	NAVMC 2795
ENLISTED CAREER COUNSELOR'S HANDOUT	MME HANDOUT
AUTOMATED SURFACE OBSERVING SYSTEM (ASOS) USER'S GUIDE	ASOS
MIDDS USER'S GUIDE	MIDDS
USER'S LOGISTICS SUPPORT SUMMARY (ULSS) FOR THE METMF(R)	EM-400-AL-LSS-A10/AN/TMQ44A(V)1
METMF(R) SYSTEM'S MANUAL SECTION	EM000-AX-OMI-A10
SHIP'S MAINTENANCE AND MATERIAL MANAGEMENT (3M) MANUAL	OPNAVINST 4790.4
TECHNICAL MANUAL - WSR88D	NAV EM400-AA-MMM-010/WSR88D
THE USE OF THE SKEW-T LOG P DIAGRAM IN ANALYSIS AND FORECASTING	AWS/TR-79/006
ATMOSPHERIC REFRACTION	METOC 50-1T-0202
WMO 306 VOLUMES 1 & 2 ; INTERNATIONAL METEOROLOGICAL CODES	
CLOUD TYPES FOR OBSERVERS	MET 0.716
METEOROLOGICAL TECHNIQUES	AFWA TN 98/002
FORECASTER'S GUIDE TO TROPICAL METEOROLOGY	AWS TR-240
METOC CODES MANUAL	CNMOC 3140
FLEET OCEANOGRAPHIC AND ACOUSTIC REFERENCE MANUAL	RP33
CATALOG OF NAVAL OCEANOGRAPHIC OFFICE UNCLASSIFIED PUBLICATIONS	RP51
MARINE BATTLE SKILLS TRAINING (MBST) PROGRAM	MCO 1500.51
COMPETENCIES FOR THE MARINE CORPS OFFICER, VOL 2, CAPTAIN	MCO 1510.99
MARINE CORPS COMMON SKILLS (MCCS) PROGRAM	MCO 1510.121
MARINE CORPS UNIT TRAINING MANAGEMENT	MCO 1553.3
AVIATION PROGRAM MANUAL	MCO P3500.14H
MARINE CORPS TRAINING, EXERCISE, AND EMPLOYMENT PLAN (MCTEEP)	MCO 3500.25
NBC FIELD HANDBOOK	FM 3-7
INTELLIGENCE PREPARATION OF THE BATTLEFIELD	FM 34-130
GROUND COMBAT OPERATIONS	FMFM 6
INTELLIGENCE OPERATIONS	MCWP 2-1
AVIATION OPERATIONS	MCWP 3-2
AVIATION GROUND SUPPORT	MCWP 3-21.1
DOCTRINE FOR NAVY AND MARINE CORPS JOINT RIVERINE OPERATIONS	MCWP 3-35.4
MAGTF METOC SUPPORT	MCWP 3-35.7
MARINE CORPS PLANNING PROCESS	MCWP 5-1
MARINE CORPS SUPPLEMENT TO THE DOD DICTIONARY AND ASSOCIATED TERMS	MCRP 5-12

APPENDIX E

APPRENTICE METOC ANALYST DESIGNATION CHECKLIST

Name:	Rank:	SSN:

Note: The following METOC qualifications are required to be completed prior to being designated as an Apprentice METOC Analyst (AMA). This checklist serves as a tracking mechanism for completion of the AMA designation. All events listed on the following tables are required to be completed prior to an official designation.

1. Meteorological Surface Observation (MSO) Qualification

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MSO-200	Demonstrate knowledge of surface observation fundamentals.		
MSO-201	Perform ceiling balloon operations.		
MSO-202	Compute meteorological values.		
MSO-203	Take, record and disseminate a surface meteorological observation.		
MDN-623	To certify knowledge of local area policies and procedures.		
GME-632	Certify proficiency at operating garrison handheld meteorological devices.		
GME-633	Certify proficiency at Automated Surface Observing System (ASOS) system commands.		

MSO Qualification		MAI INITIALS	OFFICER INITIALS
DATE QUALIFICATION COMPLETE:			
DATE QUALIFICATION AWARDED:			

2. Upper Air Observer (UAS) Qualification

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
UAS-210	Introduction to upper air observational equipment and procedures.		
UAS-211	Decode upper air messages.		
UAS-212	Setup a theodolite.		
UAS-213	Conduct an upper-atmospheric sounding.		
UAS-214	Plot and analyze a Skew-T Log-P diagram.		
UAS-215	Conduct a PIBAL observation.		

(Upper Air Observer (UAS) Qualification – Continued.)

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MDN-623	To certify knowledge of local area policies and procedures.		

UAS Qualification		MAI INITIALS	OFFICER INITIALS
DATE QUALIFICATION COMPLETE:			
DATE QUALIFICATION AWARDED:			

3. Oceanographic Observer (OHS) Qualification

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
OHS-220	Certify proficiency at calculating tidal data.		
OHS-221	Introduce oceanographic/littoral warfare products.		
MDN-623	To certify knowledge of local area policies and procedures.		

OHS Qualification		MAI INITIALS	OFFICER INITIALS
DATE QUALIFICATION COMPLETE:			
DATE QUALIFICATION AWARDED:			

4. Core skill Basic events required for AMA designation.

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
AMS-225	Demonstrate core knowledge of atmospheric physics.		
AMS-226	Demonstrate the core knowledge of atmospheric dynamics.		
AMS-227	Demonstrate proficiency in the knowledge of atmospheric fundamentals.		
AMS-228	Global and regional METOC model data.		
AMS-229	Initialize and verify meteorological model output.		
AMS-230	Introduce graphical METOC products.		
AMS-231	Forecast synoptic scale systems.		
AMS-232	Forecast severe weather.		
AMS-233	Forecast local area (mesoscale/microscale) meteorological elements and phenomenon.		
AMS-234	Forecast tropical cyclone development and movement.		
AMS-235	Produce a limited data forecast.		

APPENDIX E

APPRENTICE METOC ANALYST DESIGNATION CHECKLIST

(Core skill Basic events required for AMA designation – Continued.)

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MDR-240	Perform basic meteorological radar system(s) operations.		
MDR-241	Perform basic radar imagery interpretation.		
MDR-242	Perform advanced radar imagery interpretation.		
MSAT-245	Analyze meteorological features on satellite imagery.		
MSAT-246	Perform advanced operations on available satellite system.		
MSAT-247	Analyze and interpret satellite imagery.		
MCS-250	Calculate astronomical data.		
MCS-251	Generate astronomical and climatological data.		
WWA-255	Familiarize with weather warnings and advisories.		
WWA-256	Demonstrate knowledge of weather warnings.		
WWA-257	Demonstrate proficiency in procedures for issuing weather warnings and advisories.		
WWA-258	Disseminate weather warnings.		
WWA-259	Display (plot) meteorological weather warnings/advisories.		
MDA-260	Analyze and interpret a thickness chart.		
MDA-261	Analyze and interpret a vorticity chart.		
MDA-262	Analyze and interpret upper atmospheric weather charts.		
MDA-263	Analyze and interpret a surface pressure chart.		
MDA-264	Develop synoptic scale forecast using prognosis techniques.		
MDA-265	Introduce elements forecasted from a plotted Skew-T Log P.		
MDA-266	Analyze atmospheric conditions from the SKEW T LOG P Diagram.		
MDA-267	Conduct a streamline analysis.		
MPB-270	Brief METOC features from (re) analyzed products.		
MPB-271	Brief synoptic chart set.		

(Core skill Basic events required for AMA designation – Continued.)

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MFS-275	Encode and disseminate pilot reports (PIREPs).		
MFS-276	Produce Terminal Aerodrome Forecast (TAF).		
MFS-277	Generate Optimum Path Aircraft Routing System (OPARS) products.		
MFS-278	Introduce flight weather products.		

Completion of Core Skill Basic Training		MAI INITIALS	OFFICER INITIALS
DATE COMPLETE:			
DATE DESIGNATION AWARDED:			

APPENDIX F

JOURNEYMAN METOC ANALYST DESIGNATION CHECKLIST

Name:	Rank:	SSN:

NOTE: The following METOC qualifications/designations and events are required to be completed prior to being designated as a Journeyman METOC Analyst (JMA). This checklist serves as a tracking mechanism for completion of the JMA designation. All events listed on the following tables are required to be completed prior to an official designation. Completion dates and initials for shaded events are located on Appendix E.

1. Apprentice METOC Analyst (AMA) Designation

Apprentice METOC Analyst Designation		MAI INITIALS	OFFICER INITIALS
DATE DESIGNATION COMPLETE:			
DATE DESIGNATION AWARDED:			

2. Meteorological Radar (MDR) Qualification

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MDR-240	Perform basic meteorological radar system(s) operations.		
MDR-241	Perform basic radar imagery interpretation.		
MDR-242	Perform advanced radar imagery interpretation.		
MDR-310	Perform advanced operations on meteorological radar.		
MDR-311	Demonstrate knowledge of meteorological radar system(s) management.		

MDR Qualification		MAI INITIALS	OFFICER INITIALS
DATE QUALIFICATION COMPLETE:			
DATE QUALIFICATION AWARDED:			

3. Oceanographic Forecast Support (OFS) Qualification

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
OHS-220	Certify proficiency at calculating tidal data.		
OHS-221	Introduce oceanographic/littoral warfare products.		
OHS-300	Conduct surf observations.		

(Oceanographic Forecast Support (OFS) Qualification – Continued.)

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
OHS-301	Demonstrate knowledge of surf forecasting.		
OHS-302	Compute Modified Surf Index (MSI).		
OHS-303	Create surf forecast.		

OFS Qualification		MAI INITIALS	OFFICER INITIALS
DATE QUALIFICATION COMPLETE:			
DATE QUALIFICATION AWARDED:			

4. METOC Impact Assessment (MIA) Qualification

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MIA-360	Familiarization with products and sources for assessment of METOC impacts on MAGTF Operations.		
MIA-361	Familiarization with oceanographic forecasting and impact assessment.		
MIA-362	Conduct a mission analysis.		
MIA-363	Demonstrate proficiency on METOC software applications.		
MIA-364	Assess METOC impacts on aviation operations.		
MIA-365	Assess METOC impacts on ground operations.		
MIA-366	Assess METOC impacts on intelligence operations.		
MIA-367	Assess METOC impacts on logistical operations.		
MIA-368	Produce mission specific products.		
MPB-341	Conduct an Aviation Strike Brief.		
MPB-342	Conduct a Search And Rescue (SAR) brief.		

APPENDIX F

JOURNEYMAN METOC ANALYST DESIGNATION CHECKLIST

(METOC Impact Assessment (MIA) Qualification – Continued.)

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MPB-343	Conduct a climatology brief.		
MPB-344	Familiarization with environmental impact briefings and reporting (when required).		
MFS-347	Produce mission specific meteorological products that support MAGTF operations.		

MIA Qualification		MAI INITIALS	OFFICER INITIALS
DATE QUALIFICATION COMPLETE:			
DATE QUALIFICATION AWARDED:			

5. Core Skill Advanced events required for JMA designation.

EVENT	GOAL	SNM INIT. DATE	MAI INIT. DATE
MSAT-320	Perform basic operations on the tactical satellite system(s).		
MSC-330	Generate a climatology brief.		
MFS-345	Demonstrate proficiency of flight weather briefing(s).		
MFS-346	Produce flight weather packets.		
MPC-350	Embarkation of the MetMF(R).		
MPC-351	Demonstrate proficiency with deployment requirements and procedures.		
MPC-352	Introduce METOC logistics and external support requirements.		
MPC-353	Introduce Defense Messaging System (DMS).		

(Core Skill Advanced events required for JMA designation - Continued.)

Completion of Core Skill Advanced Training		MAI INITIALS	OFFICER INITIALS
DATE COMPLETE:			
DATE DESIGNATION AWARDED:			

APPENDIX G

MASTER METOC ANALYST DESIGNATION CHECKLIST

Name:	Rank:	SSN:

Note: The following METOC qualifications/designations and events are required to be completed prior to being designated as a Master METOC Analyst (MMA). This checklist serves as a tracking mechanism for completion of the MMA designation. All events listed on the following tables are required to be completed prior to an official designation. Completion dates and initials for shaded events are located on Appendix E and Appendix F.

1. Apprentice METOC Analyst (AMA) Designation

Apprentice METOC Analyst Designation		MAI INITIALS	OFFICER INITIALS
DATE DESIGNATION COMPLETE:			
DATE DESIGNATION AWARDED:			

2. Journeyman METOC Analyst (JMA) Designation

Journeyman METOC Analyst Designation		MAI INITIALS	OFFICER INITIALS
DATE DESIGNATION COMPLETE:			
DATE DESIGNATION AWARDED:			

3. METOC Analyst Instructor (MAI) Designation

METOC Analyst Instructor Designation		MAI INITIALS	OFFICER INITIALS
DATE DESIGNATION COMPLETE:			
DATE DESIGNATION AWARDED:			

APPENDIX H

QUALIFICATION LETTER EXAMPLE

[COMMAND LETTERHEAD]

3500
[UNIT CODE]
[DD MMM YYYY]

From: [Qualifying Authority], [Command], [Location]
To: [Name of individual receiving qualification] [SSN]/[MOS] USMC

Subj: METEOROLOGICAL AND OCEANOGRAPHIC (METOC) QUALIFICATION ICO [RANK, FIRST NAME, MI, LAST NAME MOS/USMC]

Ref: (a) MCO P3500.66, T&R Manual, METOC

1. Through the certification processes in the functions and roles set forth by the reference, you are hereby qualified as an [METOC qualification example].

2. This qualification authorizes you to conduct the following functions:

   a. Observe, record, and disseminate current weather parameters and validate accuracy of observation through use of your initials.

   b. Disseminate warnings and advisories set by the METOC unit.

   c. Calculate and disseminate wet bulb global temperature index.

   d. Operate lightning detection equipment.

   e. Operate weather radar equipment

   f. Plot and analyze upper atmospheric sounding data.

   g. Identification, retrieval and plotting of weather warnings affecting local area.

   h. Conduct pilot and ceiling balloon observations.

   i. Calculate astronomical, tidal and climatological data.

3. You shall maintain proficiency in the qualification per the reference.

4. Upon receipt of this qualification letter, you are directed to commence the next stage of training outlined in the reference.

[SIGNATURE]

APPENDIX I

DESIGNATION LETTER EXAMPLE

[COMMAND LETTERHEAD]

3500
[UNIT CODE]
[DD MMM YYYY]

From: [Qualifying Authority], [Command], [Location]
To: [Name of individual receiving qualification] [SSN]/[MOS] USMC

Subj: METEOROLOGICAL AND OCEANOGRAPHIC (METOC) DESIGNATION ICO [RANK, FIRST NAME, MI, LAST NAME MOS/USMC]

Ref: (a) MCO P3500.66A, T&R Manual, METOC

1. Through the certification processes in the functions and roles set forth by the reference, you are hereby designated as an [METOC Designation].

2. This designation certifies that you have successfully demonstrated combat leadership effectiveness in the following functions:

a. Qualification number one.

b. Qualification number two.

c. Qualification number three.

3. You shall maintain this designation unless removed for cause in accordance with the reference.

4. Upon receipt of this designation letter, you are directed to commence the next stage of training outlined in the reference.

[SIGNATURE]